



## Global Southern Ocean HYPM Mooring Model Analysis

designed for 4786m Depth



By: P. Chua

05-Aug-2014

DCN: 3201-00010

REV: B

REF.DES. GS02HYPM

Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

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### Revision History

3201-00010\_Global\_Southern\_Ocean\_HYPM\_Mooring\_Model\_Analysis\_2014-08-05\_RevB

Rev#	Date	Author	Description
A	31-Oct-2012	C. Begler	Initial Release, ECR# 1303-00860
B	20-Feb-2014	P. Chua	Version without GSPP, with ARF, ECR# 1303-01349



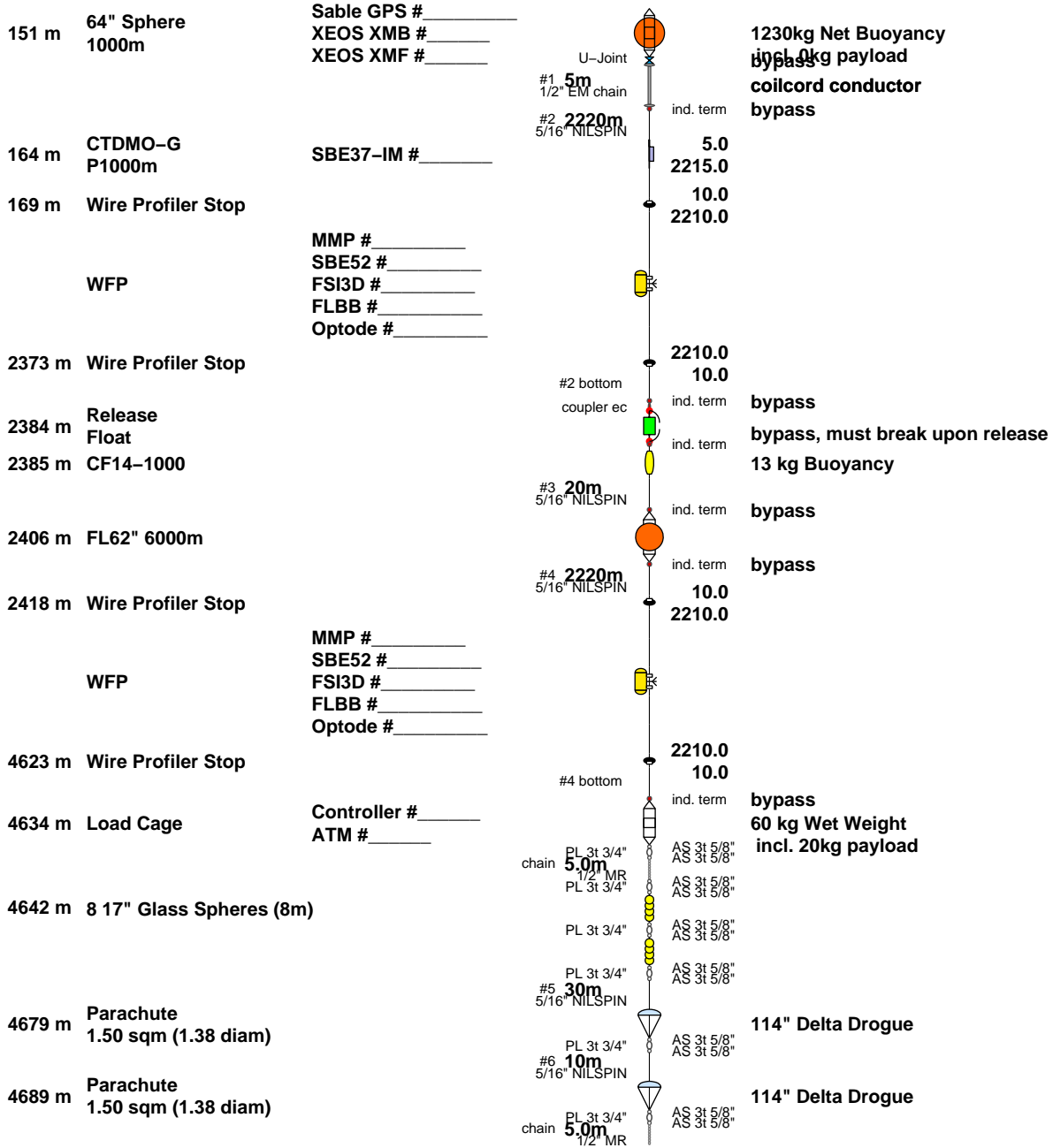
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depth	component (incl. stretch)	instruments	rope # & Length	Distance from Upper / Lower rope end
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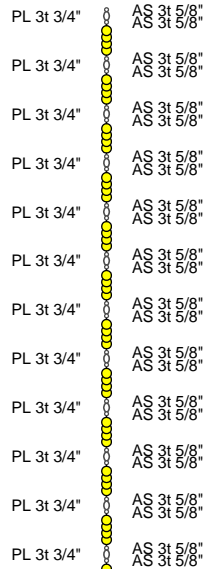
<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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depth (incl. stretch)	component instruments	rope # & Length	Distance from Upper / Lower rope end
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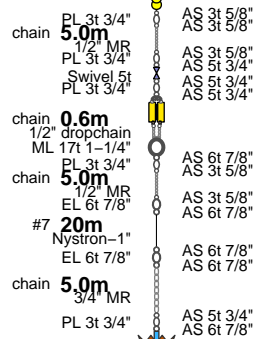
4697 m 48 17" Glass Spheres (51m)



4752 m Dual Release

ORE8242 # \_\_\_\_\_

ORE8242 # \_\_\_\_\_



4786 m double MACE Anchor  
3170 kg dry  
2742 kg wet





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### Element List

Code	Count	Label	Weight in air	/	water
-----					
Components					
13	6	Inductive Termination	18.0 kg		14.4 kg
15	1	Special Coupler Eye-Clevis	8.0 kg		6.0 kg
17	1	45deg Universal Joint	25.0 kg		16.3 kg
32	41	5/8" Bolt Type Anchor Shackles (AS) 3.2t	31.2 kg		27.1 kg
33	4	3/4" Bolt Type Anchor Shackles (AS) 4.7t	4.9 kg		4.3 kg
34	5	7/8" Bolt Type Anchor Shackles (AS) 6.5t	8.9 kg		7.8 kg
53	23	3/4" Pear Link (PL) 2.7t	19.8 kg		17.0 kg
64	2	7/8" End Link (EL) 6.3t	2.4 kg		2.1 kg
76	1	1-1/4" Master Link (ML) 17t	5.5 kg		4.8 kg
94	1	SS Swivel 5t	6.2 kg		5.3 kg
225	1	62" float 6000m	1385.0 kg		-692.0 kg
256	1	Cable Float CF14 1000m	25.0 kg		-13.0 kg
274	14	4 17" Glass Sphere 204HR on 4m chain	1344.0 kg		-1232.0 kg
300	1	Load Cage w/ Controller, ACOMM	50.0 kg		60.0 kg
306	1	64" Syntactic Sphere 1000m	1100.0 kg		-1230.0 kg
338	2	Wire Profiler Stop	10.0 kg		1.0 kg
339	2	Wire Profiler Stop	10.0 kg		1.0 kg
340	2	Wire Following Profiler	140.0 kg		-0.0 kg
374	1	CTDMO-G P1000m IM, clamp on	3.8 kg		2.8 kg
478	1	Dual Acoustic Release	77.0 kg		61.0 kg
479	1	Acoustic Release in Float	121.0 kg		-0.0 kg
480	1	DropChain 1/2"-4ft	7.8 kg		6.8 kg
491	2	Parachute	NaN kg		-0.0 kg
-----					
Components weight :			4403.5 kg		-2929.3 kg
-----					
Ropes					
103	4500m	5/16" 3x19 Jac. NILSPIN wire	1404.0 kg		958.5 kg
113	20m	Samson Nystron 1"	10.1 kg		2.0 kg
141	5m	EM chain 1/2", 2.7t	90.0 kg		35.0 kg
181	20m	Mooring (MR) chain 1/2", 2.7t	70.0 kg		60.8 kg
183	5m	Mooring (MR) chain 3/4", 6.0t	38.0 kg		33.1 kg
-----					
Ropes weight :			1612.1 kg		1089.3 kg
-----					
Summary					
			Components	4403.5 kg	-2929.3 kg
			Ropes	1612.1 kg	1089.3 kg
522	1	double MACE Anchor	3170.0 kg		2742.1 kg
-----					
Mooring total weight :			9185.6 kg		902.1 kg



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### Rope List

#	Code	Length	Label		Weight in air / water	
1	141	5m	EM chain 1/2", 2.7t		90.0 kg	35.0 kg
2x	103	2220m	5/16"	3x19 Jac. NILSPIN wire	692.6 kg	472.9 kg
3x	103	20m	5/16"	3x19 Jac. NILSPIN wire	6.2 kg	4.3 kg
4x	103	2220m	5/16"	3x19 Jac. NILSPIN wire	692.6 kg	472.9 kg
	181	5m	Mooring (MR) chain 1/2", 2.7t		17.5 kg	15.2 kg
5	103	30m	5/16"	3x19 Jac. NILSPIN wire	9.4 kg	6.4 kg
6	103	10m	5/16"	3x19 Jac. NILSPIN wire	3.1 kg	2.1 kg
	181	5m	Mooring (MR) chain 1/2", 2.7t		17.5 kg	15.2 kg
	181	5m	Mooring (MR) chain 1/2", 2.7t		17.5 kg	15.2 kg
	181	5m	Mooring (MR) chain 1/2", 2.7t		17.5 kg	15.2 kg
7	113	20m	Samson Nystroon 1"		10.1 kg	2.0 kg
	183	5m	Mooring (MR) chain 3/4", 6.0t		38.0 kg	33.1 kg

Symmetric Marker: 6

#	Length	Type	Position of Markers [m]	
2x	2220m	5/16" NILSPIN:	5,	10, 2210, 2215
4x	2220m	5/16" NILSPIN:	10,	2210



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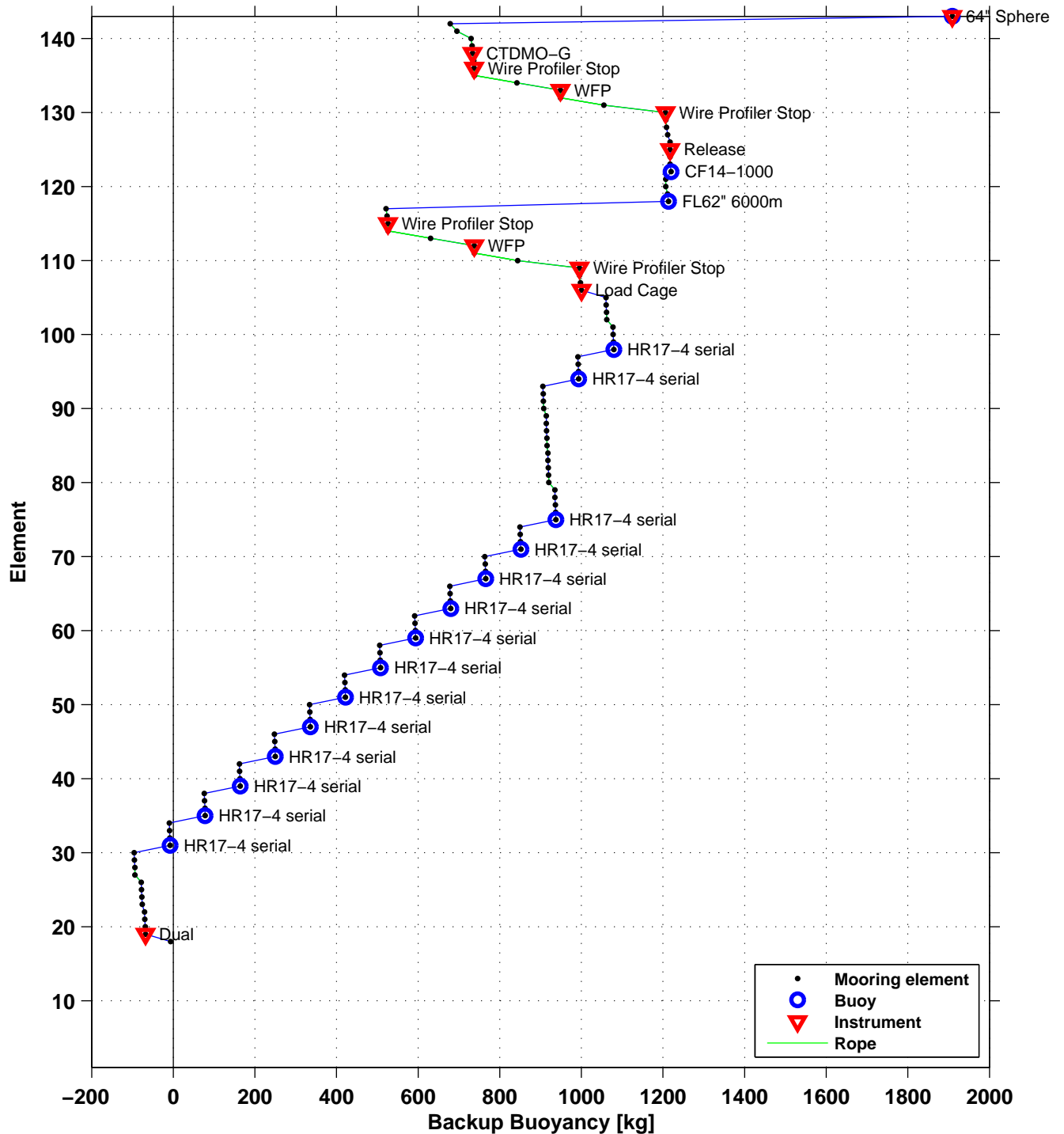


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### Backup Buoyancy



**NO Current Vertical anchor load : 1840 kg**  
**Wet safe anchor weight : 2300 kg (125%, max: 500 kg)**  
**Wet / Dry MACE anchor weight : 2742 kg / 3170 kg**



# Global Southern Ocean HYPM Mooring Model Analysis

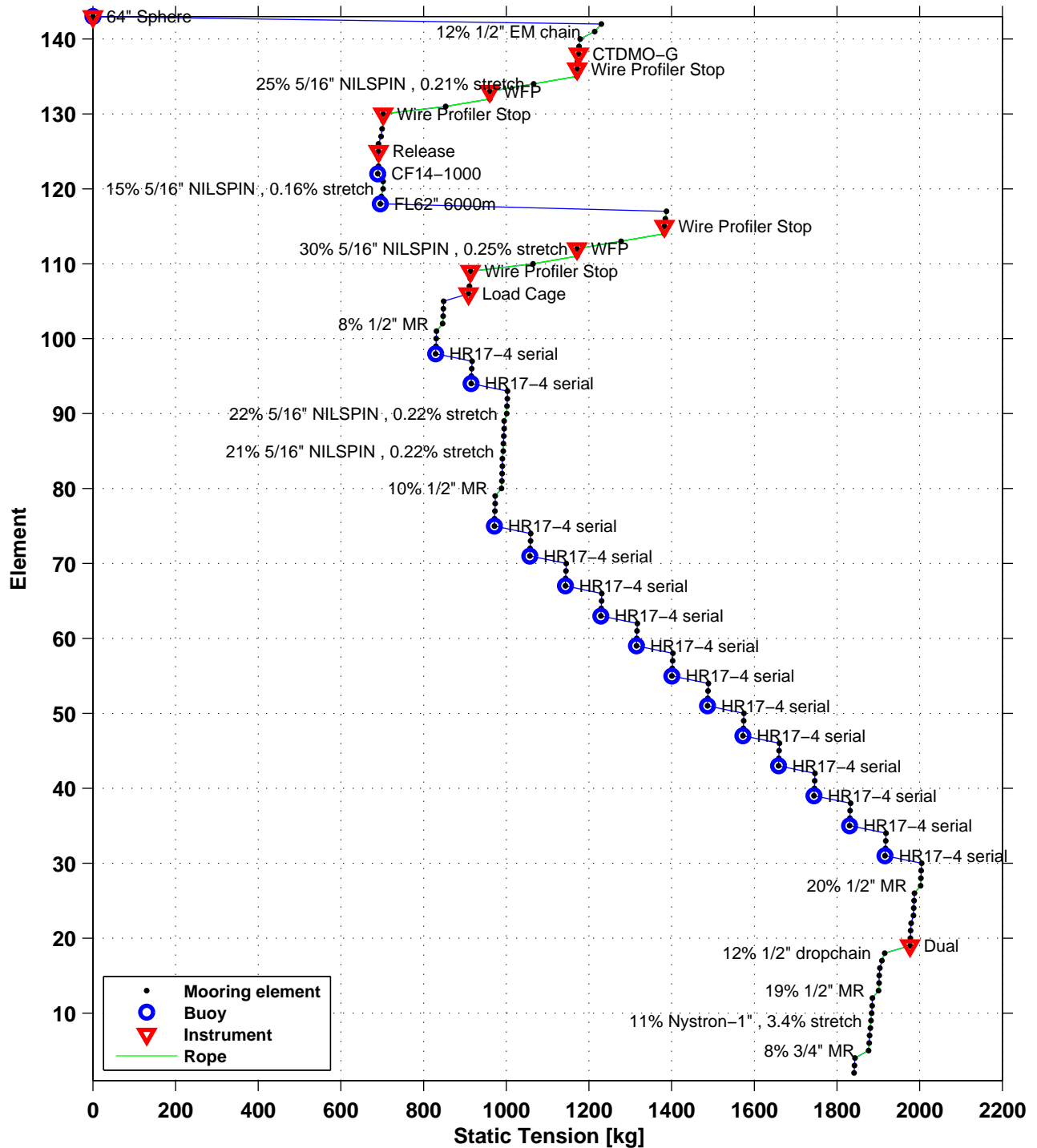
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## No Current Static Tension



NO Current Vertical anchor load : 1840 kg  
 Wet safe anchor weight : 2300 kg (125%, max: 500 kg)  
 Wet / Dry MACE anchor weight : 2742 kg / 3170 kg





# Global Southern Ocean HYPM Mooring Model Analysis

designed for 4786m Depth

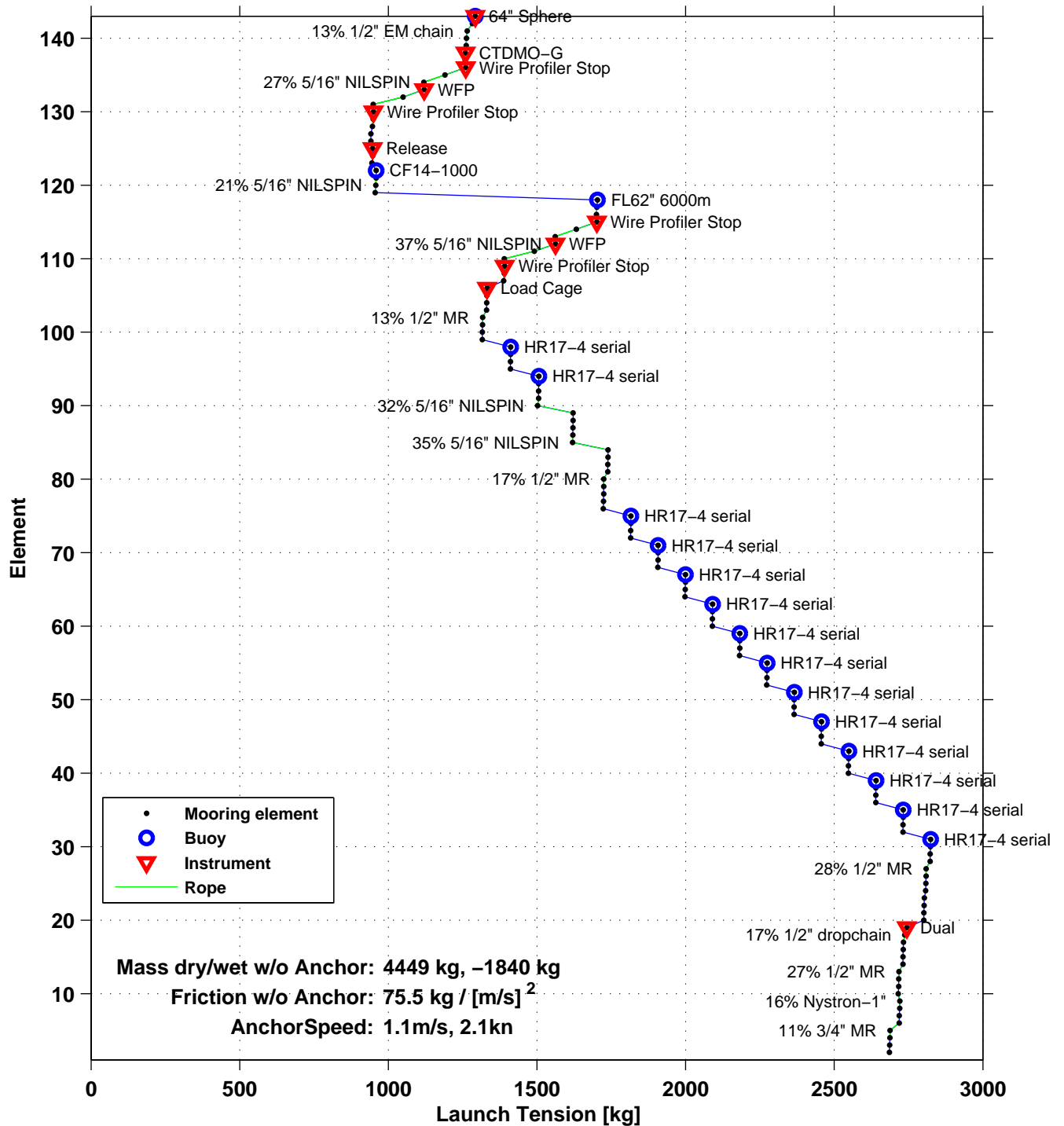


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## Steady State Launch Tension



**NO Current Vertical anchor load: 1840 kg**  
**Wet safe anchor weight: 2300 kg (125%, max: 500 kg)**  
**Wet / Dry MACE anchor weight: 2742 kg / 3170 kg**



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**No Current Static Solution – Parameter**

#	ID	Mooring Element	Length [m]	Buoy [kg]	Backup B. [kg]	Height [m]	Design Dpt [m]	Tension [kg]	[%]	Stretch [m]	[%]
143	306	64" Sphere 1000m	2.3	1230.0	1908.7	4634.9	151.1	0.0	0.0	0.00	0.00
142	17	U-Joint	0.3	-16.3	678.7	4632.7	153.5	1230.0	7.7	0.00	0.00
141	141	1/2" EM chain	5.0	-35.0	695.0	4632.4	156.1	1213.7	12.1	0.00	0.00
140	13	ind. term	0.1	-2.4	730.0	4627.4	158.7	1178.7	7.4	0.00	0.00
139	103	5/16" NILSPIN	5.0	-1.1	732.4	4627.3	161.2	1176.3	25.3	0.01	0.26
138	374	CTDMO-G P1000m	0.0	-2.8	733.5	4622.3	163.7	1175.2	11.8	0.00	0.00
137	103	5/16" NILSPIN	5.0	-1.1	736.3	4622.3	166.2	1172.4	25.2	0.01	0.26
136	339	Wire Profiler St	0.0	-0.5	737.4	4617.2	168.8	1171.4	19.5	0.00	0.00
135	103	5/16" NILSPIN	491.2	-104.4	737.9	4617.2	414.4	1170.9	25.2	1.22	0.25
134	103	5/16" NILSPIN	501.1	-106.5	842.2	4126.0	910.5	1066.5	22.9	1.12	0.22
133	340	WFP	0.0	0.0	948.7	3624.9	1161.1	960.0	9.6	0.00	0.00
132	103	5/16" NILSPIN	501.0	-106.5	948.7	3624.9	1411.6	960.0	20.6	1.00	0.20
131	103	5/16" NILSPIN	711.2	-151.2	1055.2	3123.9	2017.7	853.5	18.3	1.22	0.17
130	338	Wire Profiler St	0.0	-0.5	1206.5	2412.7	2373.3	702.3	11.7	0.00	0.00
129	103	5/16" NILSPIN	10.0	-2.1	1207.0	2412.7	2378.3	701.8	15.1	0.02	0.16
128	13	ind. term	0.1	-2.4	1209.1	2402.7	2383.4	699.6	4.4	0.00	0.00
127	15	coupler ec	0.2	-6.0	1211.5	2402.6	2383.5	697.2	4.4	0.00	0.00
125	479	Release Float	1.0	0.0	1217.5	2402.4	2384.1	691.2	6.9	0.00	0.00
123	13	ind. term	0.1	-2.4	1217.5	2401.4	2384.7	691.2	4.3	0.00	0.00
122	256	CF14-1000	0.0	13.0	1219.9	2401.3	2384.7	688.8	11.5	0.00	0.00
120	103	5/16" NILSPIN	20.0	-4.3	1206.9	2401.3	2394.8	701.8	15.1	0.03	0.16
119	13	ind. term	0.1	-2.4	1211.1	2381.2	2404.8	697.6	4.4	0.00	0.00
118	225	FL62" 6000m	2.6	692.0	1213.5	2381.1	2406.2	695.2	7.0	0.00	0.00
117	13	ind. term	0.1	-2.4	521.5	2378.5	2407.6	1387.2	8.7	0.00	0.00
116	103	5/16" NILSPIN	10.0	-2.1	523.9	2378.4	2412.6	1384.8	29.8	0.03	0.31
115	339	Wire Profiler St	0.0	-0.5	526.1	2368.4	2417.6	1382.7	23.0	0.00	0.00
114	103	5/16" NILSPIN	491.4	-104.4	526.6	2368.4	2663.4	1382.2	29.7	1.44	0.29



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**No Current Static Solution – Parameter, cont.**

#	ID	Mooring Element	Length [m]	Buoy [kg]	Backup B. [kg]	Height [m]	Design Dpt [m]	Tension [kg]	[%]	Stretch [m]	[%]
113	103	5/16" NILSPIN	501.4	-106.5	630.9	1876.9	3159.8	1277.8	27.5	1.36	0.27
112	340	WFP	0.0	0.0	737.4	1375.6	3410.4	1171.3	11.7	0.00	0.00
111	103	5/16" NILSPIN	501.2	-106.5	737.4	1375.6	3661.1	1171.3	25.2	1.24	0.25
110	103	5/16" NILSPIN	711.6	-151.2	843.9	874.3	4267.5	1064.8	22.9	1.56	0.22
109	338	Wire Profiler St	0.0	-0.5	995.2	162.8	4623.2	913.6	15.2	0.00	0.00
108	103	5/16" NILSPIN	10.0	-2.1	995.7	162.8	4628.2	913.1	19.6	0.02	0.20
107	13	ind. term	0.1	-2.4	997.8	152.8	4633.3	910.9	5.7	0.00	0.00
106	300	Load Cage	1.5	-60.0	1000.2	152.7	4634.1	908.5	9.1	0.00	0.00
105	32	AS 3t 5/8"	0.1	-0.7	1060.2	151.2	4634.9	848.5	7.1	0.00	0.00
104	53	PL 3t 3/4"	0.1	-0.7	1060.9	151.1	4635.0	847.9	7.1	0.00	0.00
103	32	AS 3t 5/8"	0.1	-0.7	1061.6	151.0	4635.1	847.1	7.1	0.00	0.00
102	181	1/2" MR	5.0	-15.2	1062.3	150.9	4637.6	846.5	8.5	0.00	0.00
101	32	AS 3t 5/8"	0.1	-0.7	1077.5	145.9	4640.1	831.3	6.9	0.00	0.00
100	53	PL 3t 3/4"	0.1	-0.7	1078.1	145.8	4640.2	830.6	6.9	0.00	0.00
99	32	AS 3t 5/8"	0.1	-0.7	1078.9	145.7	4640.3	829.9	6.9	0.00	0.00
98	274	HR17-4 serial	4.0	88.0	1079.5	145.7	4642.3	829.2	8.3	0.00	0.00
97	32	AS 3t 5/8"	0.1	-0.7	991.5	141.7	4644.4	917.2	7.6	0.00	0.00
96	53	PL 3t 3/4"	0.1	-0.7	992.2	141.6	4644.5	916.5	7.6	0.00	0.00
95	32	AS 3t 5/8"	0.1	-0.7	992.9	141.5	4644.5	915.8	7.6	0.00	0.00
94	274	HR17-4 serial	4.0	88.0	993.6	141.4	4646.6	915.1	9.2	0.00	0.00
93	32	AS 3t 5/8"	0.1	-0.7	905.6	137.4	4648.6	1003.1	8.4	0.00	0.00
92	53	PL 3t 3/4"	0.1	-0.7	906.3	137.4	4648.7	1002.5	8.4	0.00	0.00
91	32	AS 3t 5/8"	0.1	-0.7	907.0	137.2	4648.8	1001.7	8.3	0.00	0.00
90	103	5/16" NILSPIN	30.1	-6.4	907.7	137.2	4663.9	1001.1	21.5	0.07	0.22
89	491	Parachute	0.0	0.0	914.0	107.1	4678.9	994.7	9.9	0.00	0.00
88	32	AS 3t 5/8"	0.1	-0.7	914.0	107.1	4678.9	994.7	8.3	0.00	0.00
87	53	PL 3t 3/4"	0.1	-0.7	914.7	107.0	4679.0	994.0	8.3	0.00	0.00



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**No Current Static Solution – Parameter, cont.**

#	ID	Mooring Element	Length [m]	Buoy [kg]	Backup B. [kg]	Height [m]	Design Dpt [m]	Tension [kg]	[%]	Stretch [m]	[%]
86	32	AS 3t 5/8"	0.1	-0.7	915.4	106.9	4679.1	993.3	8.3	0.00	0.00
85	103	5/16" NILSPIN	10.0	-2.1	916.1	106.9	4684.1	992.6	21.3	0.02	0.22
84	491	Parachute	0.0	0.0	918.2	96.8	4689.2	990.5	9.9	0.00	0.00
83	32	AS 3t 5/8"	0.1	-0.7	918.2	96.8	4689.2	990.5	8.3	0.00	0.00
82	53	PL 3t 3/4"	0.1	-0.7	918.9	96.8	4689.3	989.8	8.2	0.00	0.00
81	32	AS 3t 5/8"	0.1	-0.7	919.6	96.7	4689.4	989.1	8.2	0.00	0.00
80	181	1/2" MR	5.0	-15.2	920.3	96.6	4691.9	988.4	9.9	0.00	0.00
78	32	AS 3t 5/8"	0.1	-0.7	935.5	91.6	4694.4	973.2	8.1	0.00	0.00
77	53	PL 3t 3/4"	0.1	-0.7	936.2	91.5	4694.5	972.6	8.1	0.00	0.00
76	32	AS 3t 5/8"	0.1	-0.7	936.9	91.4	4694.6	971.8	8.1	0.00	0.00
75	274	HR17-4 serial	4.0	88.0	937.6	91.4	4696.6	971.2	9.7	0.00	0.00
74	32	AS 3t 5/8"	0.1	-0.7	849.6	87.4	4698.7	1059.2	8.8	0.00	0.00
73	53	PL 3t 3/4"	0.1	-0.7	850.2	87.3	4698.8	1058.5	8.8	0.00	0.00
72	32	AS 3t 5/8"	0.1	-0.7	851.0	87.2	4698.9	1057.8	8.8	0.00	0.00
71	274	HR17-4 serial	4.0	88.0	851.6	87.1	4700.9	1057.1	10.6	0.00	0.00
70	32	AS 3t 5/8"	0.1	-0.7	763.6	83.1	4702.9	1145.1	9.5	0.00	0.00
69	53	PL 3t 3/4"	0.1	-0.7	764.3	83.0	4703.0	1144.4	9.5	0.00	0.00
68	32	AS 3t 5/8"	0.1	-0.7	765.0	82.9	4703.1	1143.7	9.5	0.00	0.00
67	274	HR17-4 serial	4.0	88.0	765.7	82.9	4705.1	1143.0	11.4	0.00	0.00
66	32	AS 3t 5/8"	0.1	-0.7	677.7	78.9	4707.2	1231.0	10.3	0.00	0.00
65	53	PL 3t 3/4"	0.1	-0.7	678.3	78.8	4707.3	1230.4	10.3	0.00	0.00
64	32	AS 3t 5/8"	0.1	-0.7	679.1	78.7	4707.3	1229.6	10.2	0.00	0.00
63	274	HR17-4 serial	4.0	88.0	679.7	78.6	4709.4	1229.0	12.3	0.00	0.00
62	32	AS 3t 5/8"	0.1	-0.7	591.7	74.6	4711.4	1317.0	11.0	0.00	0.00
61	53	PL 3t 3/4"	0.1	-0.7	592.4	74.6	4711.5	1316.3	11.0	0.00	0.00
60	32	AS 3t 5/8"	0.1	-0.7	593.1	74.4	4711.6	1315.6	11.0	0.00	0.00
59	274	HR17-4 serial	4.0	88.0	593.8	74.4	4713.6	1314.9	13.1	0.00	0.00



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

**No Current Static Solution – Parameter, cont.**

#	ID	Mooring Element	Length [m]	Buoy [kg]	Backup B. [kg]	Height [m]	Design Dpt [m]	Tension [kg]	[%]	Stretch [m]	[%]
58	32	AS 3t 5/8"	0.1	-0.7	505.8	70.4	4715.7	1402.9	11.7	0.00	0.00
57	53	PL 3t 3/4"	0.1	-0.7	506.5	70.3	4715.7	1402.3	11.7	0.00	0.00
56	32	AS 3t 5/8"	0.1	-0.7	507.2	70.2	4715.8	1401.5	11.7	0.00	0.00
55	274	HR17-4 serial	4.0	88.0	507.9	70.1	4717.9	1400.9	14.0	0.00	0.00
54	32	AS 3t 5/8"	0.1	-0.7	419.9	66.1	4719.9	1488.9	12.4	0.00	0.00
53	53	PL 3t 3/4"	0.1	-0.7	420.5	66.1	4720.0	1488.2	12.4	0.00	0.00
52	32	AS 3t 5/8"	0.1	-0.7	421.3	66.0	4720.1	1487.5	12.4	0.00	0.00
51	274	HR17-4 serial	4.0	88.0	421.9	65.9	4722.1	1486.8	14.9	0.00	0.00
50	32	AS 3t 5/8"	0.1	-0.7	333.9	61.9	4724.1	1574.8	13.1	0.00	0.00
49	53	PL 3t 3/4"	0.1	-0.7	334.6	61.8	4724.2	1574.1	13.1	0.00	0.00
48	32	AS 3t 5/8"	0.1	-0.7	335.3	61.7	4724.3	1573.4	13.1	0.00	0.00
47	274	HR17-4 serial	4.0	88.0	336.0	61.6	4726.4	1572.7	15.7	0.00	0.00
46	32	AS 3t 5/8"	0.1	-0.7	248.0	57.6	4728.4	1660.7	13.8	0.00	0.00
45	53	PL 3t 3/4"	0.1	-0.7	248.7	57.6	4728.5	1660.1	13.8	0.00	0.00
44	32	AS 3t 5/8"	0.1	-0.7	249.4	57.5	4728.6	1659.3	13.8	0.00	0.00
43	274	HR17-4 serial	4.0	88.0	250.1	57.4	4730.6	1658.7	16.6	0.00	0.00
42	32	AS 3t 5/8"	0.1	-0.7	162.1	53.4	4732.6	1746.7	14.6	0.00	0.00
41	53	PL 3t 3/4"	0.1	-0.7	162.7	53.3	4732.7	1746.0	14.6	0.00	0.00
40	32	AS 3t 5/8"	0.1	-0.7	163.5	53.2	4732.8	1745.3	14.5	0.00	0.00
39	274	HR17-4 serial	4.0	88.0	164.1	53.2	4734.8	1744.6	17.4	0.00	0.00
38	32	AS 3t 5/8"	0.1	-0.7	76.1	49.2	4736.9	1832.6	15.3	0.00	0.00
37	53	PL 3t 3/4"	0.1	-0.7	76.8	49.1	4737.0	1831.9	15.3	0.00	0.00
36	32	AS 3t 5/8"	0.1	-0.7	77.5	49.0	4737.1	1831.2	15.3	0.00	0.00
35	274	HR17-4 serial	4.0	88.0	78.2	48.9	4739.1	1830.5	18.3	0.00	0.00
34	32	AS 3t 5/8"	0.1	-0.7	-9.8	44.9	4741.1	1918.5	16.0	0.00	0.00
33	53	PL 3t 3/4"	0.1	-0.7	-9.2	44.8	4741.2	1917.9	16.0	0.00	0.00
32	32	AS 3t 5/8"	0.1	-0.7	-8.4	44.7	4741.3	1917.1	16.0	0.00	0.00



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

**No Current Static Solution – Parameter, cont.**

#	ID	Mooring Element	Length [m]	Buoy [kg]	Backup B. [kg]	Height [m]	Design Dpt [m]	Tension [kg]	[%]	Stretch [m]	[%]
31	274	HR17-4 serial	4.0	88.0	-7.8	44.7	4743.3	1916.5	19.2	0.00	0.00
30	32	AS 3t 5/8"	0.1	-0.7	-95.8	40.7	4745.4	2004.5	16.7	0.00	0.00
29	53	PL 3t 3/4"	0.1	-0.7	-95.1	40.6	4745.5	2003.8	16.7	0.00	0.00
28	32	AS 3t 5/8"	0.1	-0.7	-94.4	40.5	4745.5	2003.1	16.7	0.00	0.00
27	181	1/2" MR	5.0	-15.2	-93.7	40.4	4748.1	2002.4	20.0	0.00	0.00
26	32	AS 3t 5/8"	0.1	-0.7	-78.5	35.4	4750.6	1987.2	16.6	0.00	0.00
25	53	PL 3t 3/4"	0.1	-0.7	-77.8	35.4	4750.7	1986.6	16.6	0.00	0.00
24	33	AS 5t 3/4"	0.1	-1.1	-77.1	35.2	4750.8	1985.8	11.0	0.00	0.00
23	94	Swivel 5t	0.2	-5.3	-76.0	35.2	4750.9	1984.8	19.8	0.00	0.00
22	33	AS 5t 3/4"	0.1	-1.1	-70.7	34.9	4751.1	1979.4	11.0	0.00	0.00
21	53	PL 3t 3/4"	0.1	-0.7	-69.6	34.9	4751.2	1978.3	16.5	0.00	0.00
20	33	AS 5t 3/4"	0.1	-1.1	-68.9	34.8	4751.3	1977.6	11.0	0.00	0.00
19	478	Dual Release	1.0	-61.0	-67.8	34.7	4751.8	1976.5	19.8	0.00	0.00
18	480	1/2" dropchain	0.6	-6.8	-6.8	33.6	4752.7	1915.5	12.0	0.00	0.00
17	76	ML 17t 1-1/4"	0.2	-4.8	NaN	33.0	4753.1	1908.7	4.3	0.00	0.00
16	34	AS 6t 7/8"	0.1	-1.6	NaN	32.8	4753.3	1903.9	7.9	0.00	0.00
15	53	PL 3t 3/4"	0.1	-0.7	NaN	32.7	4753.4	1902.3	15.9	0.00	0.00
14	32	AS 3t 5/8"	0.1	-0.7	NaN	32.6	4753.4	1901.6	15.8	0.00	0.00
13	181	1/2" MR	5.0	-15.2	NaN	32.5	4756.0	1900.9	19.0	0.00	0.00
12	32	AS 3t 5/8"	0.1	-0.7	NaN	27.5	4758.5	1885.7	15.7	0.00	0.00
11	64	EL 6t 7/8"	0.1	-1.0	NaN	27.5	4758.6	1885.1	7.9	0.00	0.00
10	34	AS 6t 7/8"	0.1	-1.6	NaN	27.3	4758.7	1884.0	7.9	0.00	0.00
9	113	Nystron-1"	20.7	-2.0	NaN	27.2	4769.1	1882.5	11.2	0.67	3.36
8	34	AS 6t 7/8"	0.1	-1.6	NaN	6.6	4779.5	1880.5	7.8	0.00	0.00
7	64	EL 6t 7/8"	0.1	-1.0	NaN	6.5	4779.6	1879.0	7.8	0.00	0.00
6	34	AS 6t 7/8"	0.1	-1.6	NaN	6.4	4779.7	1877.9	7.8	0.00	0.00
5	183	3/4" MR	5.0	-33.1	NaN	6.3	4782.2	1876.4	7.8	0.00	0.00



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

**No Current Static Solution – Parameter, cont.**

#	ID	Mooring Element	Length [m]	Buoy [kg]	Backup B. [kg]	Height [m]	Design Dpt [m]	Tension [kg]	[%]	Stretch [m]	[%]
4	33	AS 5t 3/4"	0.1	-1.1	NaN	1.3	4784.8	1843.3	10.2	0.00	0.00
3	53	PL 3t 3/4"	0.1	-0.7	NaN	1.2	4784.9	1842.2	15.4	0.00	0.00
2	34	AS 6t 7/8"	0.1	-1.6	NaN	1.1	4785.0	1841.5	7.7	0.00	0.00
1	522	double MACE Anch	1.0	-2742.1	NaN	1.0	4786.0	1840.0	30.7	0.00	0.00

Max. 30.7% Static Tension at:

1	522	double MACE Anch	1.0	-2742.1	NaN	1.0	4786.0	1840.0	30.7	0.00	0.00
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Vertical anchor load : 1840 kg  
 Wet MACE Anchor weight : 2742 kg  
 Safe MACE Anchor weight : 2300 kg



## Global Southern Ocean HYPM Mooring Model Analysis

designed for 4786m Depth



By: P. Chua

05-Aug-2014

DCN: 3201-00010

REV: B

REF.DES. GS02HYPM

Source: 05-Aug-2014 13:55:53, ...Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

### Steady State Launch Tension – Parameter: descent at 1.07 m/s, 2.1 kn

#	ID	Mooring Element	Length [m]	Buoy [kg]	Diameter [m]	Area [m <sup>2</sup> ]	Ct	Drag [kg]	LaunchTension [kg]	[%]
143	306	64" Sphere 1000m	2.3	1230.0	1.630	2.087	0.50	62.44	1292.4	12.9
142	17	U-Joint	0.3	-16.3	0.300	0.071	1.50	6.35	1282.5	8.0
141	141	1/2" EM chain	5.0	-35.0	0.200	3.142	0.09	17.52	1265.0	12.7
140	13	ind. term	0.1	-2.4	0.050	0.002	1.50	0.18	1262.8	7.9
139	103	5/16" NILSPIN	5.0	-1.1	0.010	0.150	0.04	0.36	1262.1	27.1
138	374	CTDMO-G P1000m	0.0	-2.8	0.075	0.004	1.00	0.26	1259.5	12.6
137	103	5/16" NILSPIN	5.0	-1.1	0.010	0.150	0.04	0.36	1258.8	27.1
136	339	Wire Profiler St	0.0	-0.5	0.280	0.062	0.50	1.84	1260.2	21.0
135	103	5/16" NILSPIN	491.2	-104.4	0.010	14.688	0.04	34.79	1190.6	25.6
134	103	5/16" NILSPIN	501.1	-106.5	0.010	14.986	0.04	35.50	1119.6	24.1
133	340	WFP	0.0	0.0	0.350	0.096	0.20	1.15	1120.7	11.2
132	103	5/16" NILSPIN	501.0	-106.5	0.010	14.985	0.04	35.49	1049.7	22.6
131	103	5/16" NILSPIN	711.2	-151.2	0.010	21.275	0.04	50.39	948.9	20.4
130	338	Wire Profiler St	0.0	-0.5	0.280	0.062	0.50	1.84	950.2	15.8
129	103	5/16" NILSPIN	10.0	-2.1	0.010	0.300	0.04	0.71	948.8	20.4
128	13	ind. term	0.1	-2.4	0.050	0.002	1.50	0.18	946.6	5.9
127	15	coupler ec	0.2	-6.0	0.100	0.008	1.50	0.71	941.3	5.9
125	479	Release Float	1.0	0.0	0.370	0.108	0.90	5.79	947.1	9.5
123	13	ind. term	0.1	-2.4	0.050	0.002	1.50	0.18	944.9	5.9
122	256	CF14-1000	0.0	13.0	0.300	0.071	0.30	1.27	959.1	16.0
120	103	5/16" NILSPIN	20.0	-4.3	0.010	0.599	0.07	2.68	957.5	20.6
119	13	ind. term	0.1	-2.4	0.050	0.002	1.50	0.18	955.3	6.0
118	225	FL62" 6000m	2.6	692.0	1.550	1.887	0.50	56.46	1703.8	17.0
117	13	ind. term	0.1	-2.4	0.050	0.002	1.50	0.18	1701.6	10.6
116	103	5/16" NILSPIN	10.0	-2.1	0.010	0.300	0.04	0.71	1700.1	36.5
115	339	Wire Profiler St	0.0	-0.5	0.280	0.062	0.50	1.84	1701.5	28.4
114	103	5/16" NILSPIN	491.4	-104.4	0.010	14.692	0.04	34.80	1631.9	35.1
113	103	5/16" NILSPIN	501.4	-106.5	0.010	14.990	0.04	35.51	1560.9	33.5
112	340	WFP	0.0	0.0	0.350	0.096	0.20	1.15	1562.1	15.6
111	103	5/16" NILSPIN	501.2	-106.5	0.010	14.988	0.04	35.50	1491.1	32.0
110	103	5/16" NILSPIN	711.6	-151.2	0.010	21.280	0.04	50.40	1390.2	29.9
109	338	Wire Profiler St	0.0	-0.5	0.280	0.062	0.50	1.84	1391.6	23.2
108	103	5/16" NILSPIN	10.0	-2.1	0.010	0.300	0.04	0.71	1390.2	29.9
107	13	ind. term	0.1	-2.4	0.050	0.002	1.50	0.18	1387.9	8.7
106	300	Load Cage	1.5	-60.0	0.300	0.071	0.90	3.81	1331.8	13.3
105	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1331.4	11.1
104	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1330.9	11.1
103	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1330.5	11.1
102	181	1/2" MR	5.0	-15.2	0.020	0.314	0.09	1.75	1317.1	13.2
101	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1316.7	11.0
100	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1316.2	11.0
99	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1315.8	11.0
98	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.67	7.81	1411.7	14.1
97	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1411.3	11.8
96	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1410.8	11.8
95	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1410.4	11.8





## Global Southern Ocean HYPM Mooring Model Analysis

designed for 4786m Depth



By: P. Chua

05-Aug-2014

DCN: 3201-00010

REV: B

REF.DES. GS02HYPM

Source: 05-Aug-2014 13:55:53, ...Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

### Steady State Launch Tension – Parameter: descent at 1.07 m/s, 2.1 kn, cont.

#	ID	Mooring Element	Length [m]	Buoy [kg]	Diameter [m]	Area [m <sup>2</sup> ]	Ct	Drag [kg]	LaunchTension [kg]	[%]
94	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.67	7.81	1506.2	15.1
93	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1505.9	12.5
92	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1505.4	12.5
91	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1505.0	12.5
90	103	5/16" NILSPIN	30.1	-6.4	0.010	0.899	0.07	3.78	1502.4	32.3
89	491	Parachute	0.0	0.0	1.382	1.500	1.33	119.39	1621.8	16.2
88	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1621.4	13.5
87	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1620.9	13.5
86	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1620.6	13.5
85	103	5/16" NILSPIN	10.0	-2.1	0.010	0.300	0.08	1.49	1619.9	34.8
84	491	Parachute	0.0	0.0	1.382	1.500	1.33	119.39	1739.3	17.4
83	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1738.9	14.5
82	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1738.5	14.5
81	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1738.1	14.5
80	181	1/2" MR	5.0	-15.2	0.020	0.314	0.09	1.75	1724.6	17.2
78	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1724.3	14.4
77	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1723.8	14.4
76	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1723.4	14.4
75	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	1816.2	18.2
74	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1815.9	15.1
73	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1815.4	15.1
72	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1815.0	15.1
71	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	1907.8	19.1
70	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1907.5	15.9
69	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1907.0	15.9
68	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1906.6	15.9
67	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	1999.4	20.0
66	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1999.1	16.7
65	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	1998.6	16.7
64	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	1998.2	16.7
63	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2091.0	20.9
62	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2090.7	17.4
61	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2090.2	17.4
60	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2089.8	17.4
59	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2182.6	21.8
58	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2182.3	18.2
57	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2181.8	18.2
56	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2181.4	18.2
55	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2274.2	22.7
54	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2273.9	18.9
53	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2273.4	18.9
52	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2273.0	18.9
51	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2365.8	23.7
50	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2365.4	19.7
49	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2365.0	19.7
48	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2364.6	19.7



## Global Southern Ocean HYPM Mooring Model Analysis

designed for 4786m Depth



By: P. Chua

05-Aug-2014

DCN: 3201-00010

REV: B

REF.DES. GS02HYPM

Source: 05-Aug-2014 13:55:53, ...Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

### Steady State Launch Tension – Parameter: descent at 1.07 m/s, 2.1 kn, cont.

#	ID	Mooring Element	Length [m]	Buoy [kg]	Diameter [m]	Area [m <sup>2</sup> ]	Ct	Drag [kg]	LaunchTension [kg]	[%]
47	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2457.4	24.6
46	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2457.0	20.5
45	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2456.6	20.5
44	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2456.2	20.5
43	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2549.0	25.5
42	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2548.6	21.2
41	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2548.2	21.2
40	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2547.8	21.2
39	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2640.6	26.4
38	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2640.2	22.0
37	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2639.8	22.0
36	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2639.4	22.0
35	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2732.2	27.3
34	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2731.8	22.8
33	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2731.4	22.8
32	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2731.0	22.8
31	274	HR17-4 serial	4.0	88.0	0.500	0.196	0.41	4.83	2823.8	28.2
30	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2823.4	23.5
29	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2822.9	23.5
28	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2822.6	23.5
27	181	1/2" MR	5.0	-15.2	0.020	0.314	0.09	1.75	2809.1	28.1
26	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2808.8	23.4
25	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2808.3	23.4
24	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.45	2807.7	15.6
23	94	Swivel 5t	0.2	-5.3	0.100	0.008	1.20	0.56	2802.9	28.0
22	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.45	2802.2	15.6
21	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2801.8	23.3
20	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.45	2801.1	15.6
19	478	Dual Release	1.0	-61.0	0.300	0.071	0.90	3.81	2744.0	27.4
18	480	1/2" dropchain	0.6	-6.8	0.040	0.001	1.00	0.08	2737.2	17.1
17	76	ML 17t 1-1/4"	0.2	-4.8	0.085	0.006	1.50	0.51	2732.9	6.2
16	34	AS 6t 7/8"	0.1	-1.6	0.088	0.006	1.50	0.55	2731.9	11.4
15	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2731.4	22.8
14	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2731.0	22.8
13	181	1/2" MR	5.0	-15.2	0.020	0.314	0.09	1.75	2717.6	27.2
12	32	AS 3t 5/8"	0.1	-0.7	0.064	0.003	1.50	0.29	2717.2	22.6
11	64	EL 6t 7/8"	0.1	-1.0	0.066	0.003	1.50	0.31	2716.5	11.3
10	34	AS 6t 7/8"	0.1	-1.6	0.088	0.006	1.50	0.55	2715.5	11.3
9	113	Nystron-1"	20.7	-2.0	0.026	1.661	0.07	7.42	2720.9	16.2
8	34	AS 6t 7/8"	0.1	-1.6	0.088	0.006	1.50	0.55	2719.9	11.3
7	64	EL 6t 7/8"	0.1	-1.0	0.066	0.003	1.50	0.31	2719.2	11.3
6	34	AS 6t 7/8"	0.1	-1.6	0.088	0.006	1.50	0.55	2718.2	11.3
5	183	3/4" MR	5.0	-33.1	0.030	0.471	0.09	2.63	2687.8	11.2
4	33	AS 5t 3/4"	0.1	-1.1	0.080	0.005	1.50	0.45	2687.1	14.9
3	53	PL 3t 3/4"	0.1	-0.7	0.060	0.003	1.50	0.25	2686.7	22.4
2	34	AS 6t 7/8"	0.1	-1.6	0.088	0.006	1.50	0.55	2685.6	11.2



## Global Southern Ocean HYPM Mooring Model Analysis

designed for 4786m Depth



By: P. Chua

05-Aug-2014

DCN: 3201-00010

REV: B

REF.DES. GS02HYPM

Source: 05-Aug-2014 13:55:53, ...\\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

### Steady State Launch Tension – Parameter: descent at 1.07 m/s, 2.1 kn, cont.

#	ID	Mooring Element	Length [m]	Buoy [kg]	Diameter [m]	Area [m <sup>2</sup> ]	Ct	Drag [kg]	LaunchTension [kg]	[%]
1	522	double MACE Anch	1.0	-2742.1	1.000	0.785	1.20	56.40	-0.0	-0.0

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Max. 36.5% Launch Tension at:  
 116 103 5/16" NILSPIN 10.0 -2.1 0.010 0.300 0.04 0.71 1700.1 36.5

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Mass dry / wet w/o Anchor: 4449 kg, -1840 kg  
 Drag / Friction w/o Anchor: 845.7 kg, 740.4 kg/[m/s]^2  
 Dry/Wet MACE Anchor weight: 3170 kg, 2742 kg  
 Steady State AnchorSpeed : 1.07 m/s, 2.1 kn



**Global Southern Ocean HYPM Mooring Model Analysis**  
 designed for 4786m Depth

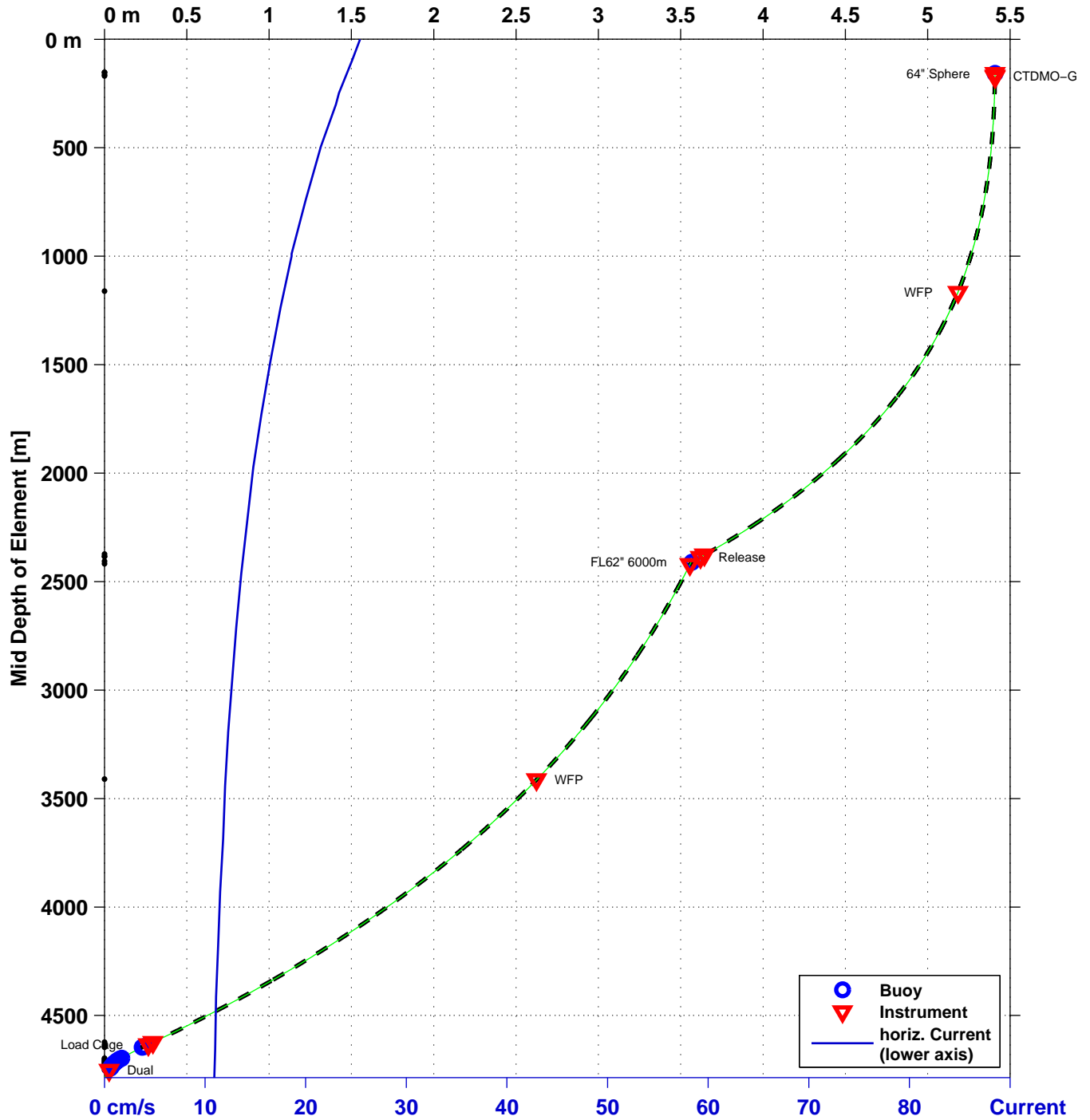


By: P. Chua      05-Aug-2014      DCN: 3201-00010      REV: B      REF.DES. GS02HYPM

Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

**Event #001 – Subduction [m]: max. 5m, Top at 158m**  
 Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf



Event #001: Vert / Horiz anchor load: 1837 kg / 77 kg  
 Vert / Horiz anchor safety : 125 % / 120 %,  
 Safe Wet MACE anchor weight: 2300 kg, (max. 500 kg or Horiz. safety)  
 Wet / Dry MACE anchor weight : 2742 kg / 3170 kg



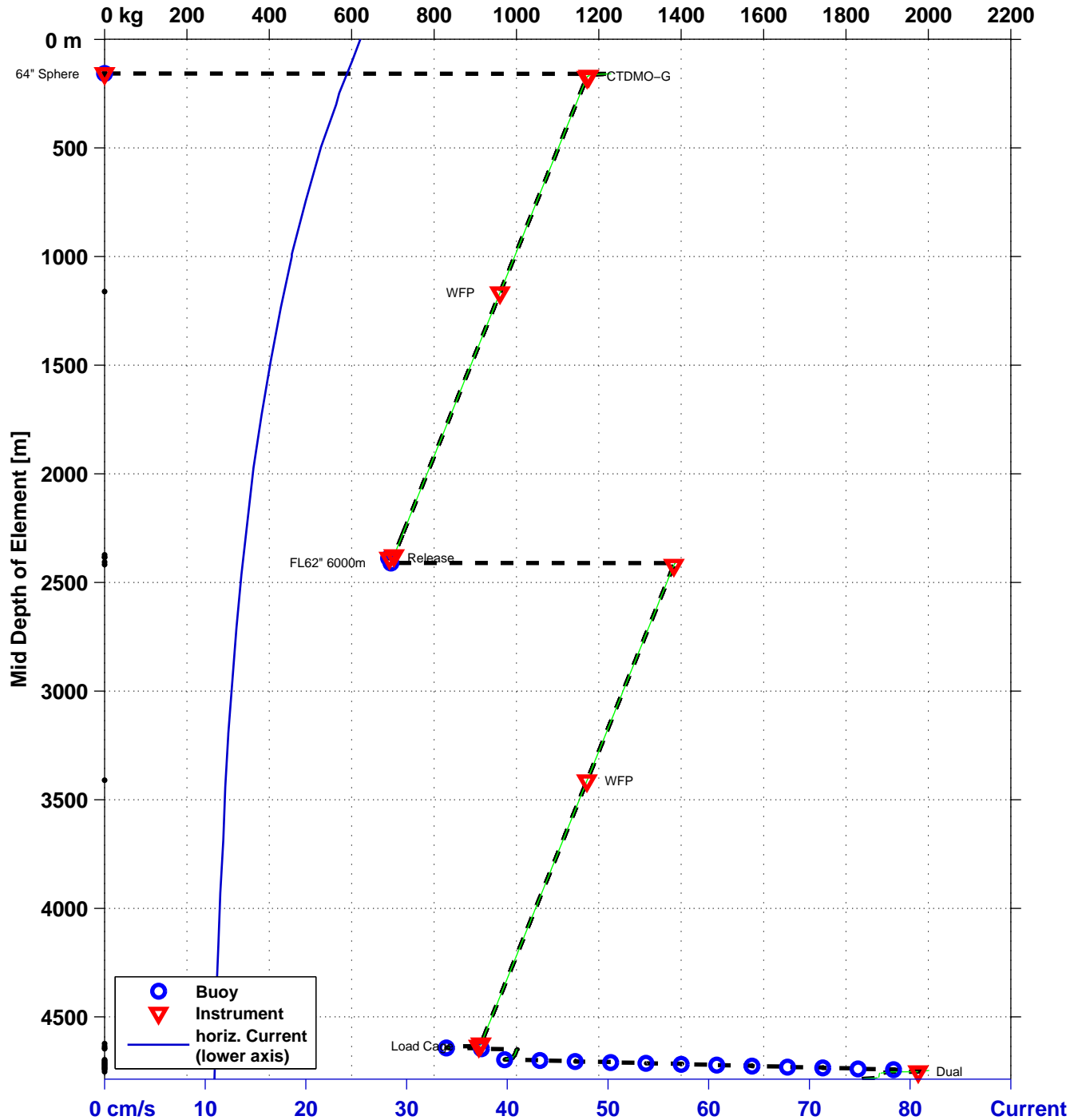
## Global Southern Ocean HYPM Mooring Model Analysis designed for 4786m Depth



By: P. Chua	05-Aug-2014	DCN: 3201-00010	REV: B	REF.DES. GS02HYPM
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Source: 05-Aug-2014 13:55:53, ...Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg  
 Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

### Event #001 – Tension [kg] Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf



Event #001: Vert / Horiz anchor load : 1837 kg / 77 kg  
 Vert / Horiz anchor safety : 125 % / 120 %,  
 Safe Wet MACE anchor weight : 2300 kg, (max. 500 kg or Horiz. safety)  
 Wet / Dry MACE anchor weight : 2742 kg / 3170 kg



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #001 – Simulation Result**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]	
143	306	64" Sphere	1000m	2.3	1230.0	2.087	0.50	0.24	3.2	0.0	0.0	0.00	0.00	156.5	5.4	209.4	0.1
142	17	U-Joint		0.3	-16.3	0.090	1.50	0.24	0.4	1230.0	7.7	0.00	0.00	158.9	5.4	209.4	0.1
141	141	1/2" EM chain		5.0	-35.0	1.000	1.30	0.24	3.9	1213.7	12.1	0.00	0.00	159.5	5.4	209.4	0.3
140	13	ind. term		0.1	-2.4	0.005	1.50	0.24	0.0	1178.7	7.4	0.00	0.00	164.1	5.4	209.4	0.4
139	103	5/16" NILSPIN		5.0	-1.1	0.048	1.10	0.24	0.2	1176.3	25.3	0.01	0.26	164.6	5.4	209.4	0.4
138	374	CTDMO-G P1000m		0.0	-2.8	0.042	1.40	0.24	0.2	1175.2	11.8	0.00	0.00	169.2	5.4	209.4	0.4
137	103	5/16" NILSPIN		5.0	-1.1	0.048	1.10	0.24	0.2	1172.4	25.2	0.01	0.26	169.7	5.4	209.4	0.4
136	339	Wire Profiler St		0.0	-0.5	0.070	0.50	0.24	0.1	1171.4	19.5	0.00	0.00	174.2	5.4	209.3	0.4
135	103	5/16" NILSPIN		491.2	-104.4	4.670	1.10	0.22	13.2	1170.9	25.2	1.22	0.25	174.7	5.4	209.3	1.1
134	103	5/16" NILSPIN		501.1	-106.5	4.765	1.10	0.19	10.0	1066.5	22.9	1.12	0.22	665.8	5.4	202.7	1.9
133	340	WFP		0.0	0.0	0.457	0.20	0.18	0.2	960.1	9.6	0.00	0.00	1166.3	5.2	189.5	1.9
132	103	5/16" NILSPIN		501.0	-106.5	4.765	1.10	0.17	7.8	960.1	20.6	1.01	0.20	1166.8	5.2	189.5	2.6
131	103	5/16" NILSPIN		711.2	-151.2	6.766	1.10	0.15	8.5	853.6	18.3	1.22	0.17	1667.4	4.8	169.8	3.9
130	338	Wire Profiler St		0.0	-0.5	0.070	0.50	0.14	0.0	702.7	11.7	0.00	0.00	2377.0	3.6	129.6	3.9
129	103	5/16" NILSPIN		10.0	-2.1	0.095	1.10	0.14	0.1	702.2	15.1	0.02	0.16	2377.5	3.6	129.6	3.9
128	13	ind. term		0.1	-2.4	0.005	1.50	0.14	0.0	700.0	4.4	0.00	0.00	2387.0	3.6	129.0	3.9
127	15	coupler ec		0.2	-6.0	0.020	1.50	0.14	0.0	697.6	4.4	0.00	0.00	2387.2	3.6	128.9	3.9
125	479	Release Float		1.0	0.0	0.592	1.20	0.14	0.7	691.6	6.9	0.00	0.00	2387.8	3.6	128.9	4.0
123	13	ind. term		0.1	-2.4	0.005	1.50	0.14	0.0	691.7	4.3	0.00	0.00	2388.3	3.6	128.9	4.0
122	256	CF14-1000		0.0	13.0	0.225	0.50	0.14	0.1	689.3	11.5	0.00	0.00	2388.4	3.6	128.9	4.0
120	103	5/16" NILSPIN		20.0	-4.3	0.191	1.10	0.14	0.2	702.2	15.1	0.03	0.16	2388.9	3.6	128.9	4.0
119	13	ind. term		0.1	-2.4	0.005	1.50	0.14	0.0	698.0	4.4	0.00	0.00	2408.4	3.6	127.5	4.0
118	225	FL62" 6000m		2.6	692.0	1.887	0.50	0.14	0.9	695.6	7.0	0.00	0.00	2409.8	3.6	127.4	4.0
117	13	ind. term		0.1	-2.4	0.005	1.50	0.14	0.0	1386.8	8.7	0.00	0.00	2411.1	3.6	127.3	2.1
116	103	5/16" NILSPIN		10.0	-2.1	0.095	1.10	0.14	0.1	1384.4	29.8	0.03	0.31	2411.7	3.6	127.3	2.1
115	339	Wire Profiler St		0.0	-0.5	0.070	0.50	0.14	0.0	1382.2	23.0	0.00	0.00	2421.2	3.6	126.9	2.1
114	103	5/16" NILSPIN		491.4	-104.4	4.670	1.10	0.13	4.7	1381.7	29.7	1.44	0.29	2421.7	3.6	126.9	2.5
113	103	5/16" NILSPIN		501.4	-106.5	4.765	1.10	0.12	4.2	1277.4	27.5	1.36	0.27	2912.7	3.2	107.5	2.9
112	340	WFP		0.0	0.0	0.457	0.20	0.12	0.1	1171.1	11.7	0.00	0.00	3413.1	2.6	84.1	2.9
111	103	5/16" NILSPIN		501.2	-106.5	4.765	1.10	0.12	3.9	1171.1	25.2	1.24	0.25	3413.6	2.6	84.1	3.4



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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**Source:** 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

**Author:** 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #001 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
110	103	5/16" NILSPIN	711.6	-151.2	6.766	1.10	0.11	5.0	1064.7	22.9	1.56	0.22	3914.0	1.9	56.7	4.3
109	338	Wire Profiler St	0.0	-0.5	0.070	0.50	0.11	0.0	913.8	15.2	0.00	0.00	4623.5	0.3	9.4	4.3
108	103	5/16" NILSPIN	10.0	-2.1	0.095	1.10	0.11	0.1	913.3	19.6	0.02	0.20	4624.0	0.3	9.4	4.3
107	13	ind. term	0.1	-2.4	0.005	1.50	0.11	0.0	911.2	5.7	0.00	0.00	4633.6	0.3	8.7	4.3
106	300	Load Cage	1.5	-60.0	0.300	1.30	0.11	0.3	908.8	9.1	0.00	0.00	4634.4	0.3	8.7	4.3
105	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	849.0	7.1	0.00	0.00	4635.1	0.3	8.6	4.6
104	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	848.3	7.1	0.00	0.00	4635.2	0.3	8.6	4.6
103	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	847.6	7.1	0.00	0.00	4635.3	0.3	8.6	4.6
102	181	1/2" MR	5.0	-15.2	0.100	1.60	0.11	0.1	846.9	8.5	0.00	0.00	4635.9	0.3	8.6	4.7
101	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	831.8	6.9	0.00	0.00	4640.4	0.2	8.2	4.7
100	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	831.1	6.9	0.00	0.00	4640.5	0.2	8.1	4.7
99	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	830.4	6.9	0.00	0.00	4640.5	0.2	8.1	4.7
98	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	829.7	8.3	0.00	0.00	4642.6	0.2	8.1	4.7
97	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	917.5	7.6	0.00	0.00	4644.6	0.2	7.8	4.3
96	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	916.8	7.6	0.00	0.00	4644.7	0.2	7.8	4.3
95	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	916.1	7.6	0.00	0.00	4644.8	0.2	7.8	4.3
94	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	915.4	9.2	0.00	0.00	4646.8	0.2	7.8	4.3
93	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1003.2	8.4	0.00	0.00	4648.8	0.2	7.5	4.0
92	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1002.5	8.4	0.00	0.00	4648.9	0.2	7.5	4.0
91	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1001.8	8.3	0.00	0.00	4649.0	0.2	7.5	4.0
90	103	5/16" NILSPIN	30.1	-6.4	0.286	1.10	0.11	0.2	1001.1	21.5	0.07	0.22	4649.5	0.2	7.5	4.0
89	491	Parachute	0.0	0.0	1.500	0.50	0.11	0.5	994.7	9.9	0.00	0.00	4679.0	0.1	5.4	4.0
88	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	994.8	8.3	0.00	0.00	4679.1	0.1	5.4	4.0
87	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	994.1	8.3	0.00	0.00	4679.2	0.1	5.4	4.0
86	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	993.4	8.3	0.00	0.00	4679.2	0.1	5.4	4.0
85	103	5/16" NILSPIN	10.0	-2.1	0.095	1.10	0.11	0.1	992.7	21.3	0.02	0.22	4679.8	0.1	5.4	4.1
84	491	Parachute	0.0	0.0	1.500	0.50	0.11	0.5	990.6	9.9	0.00	0.00	4689.3	0.1	4.7	4.1
83	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	990.6	8.3	0.00	0.00	4689.3	0.1	4.7	4.1
82	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	990.0	8.2	0.00	0.00	4689.4	0.1	4.6	4.1
81	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	989.2	8.2	0.00	0.00	4689.5	0.1	4.6	4.1



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #001 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
80	181	1/2" MR	5.0	-15.2	0.100	1.60	0.11	0.1	988.6	9.9	0.00	0.00	4690.0	0.1	4.6	4.1
78	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	973.4	8.1	0.00	0.00	4694.5	0.1	4.3	4.2
77	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	972.8	8.1	0.00	0.00	4694.6	0.1	4.3	4.2
76	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	972.0	8.1	0.00	0.00	4694.7	0.1	4.3	4.2
75	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	971.4	9.7	0.00	0.00	4696.8	0.1	4.3	4.2
74	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1059.1	8.8	0.00	0.00	4698.8	0.1	4.0	3.8
73	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1058.5	8.8	0.00	0.00	4698.9	0.1	4.0	3.9
72	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1057.7	8.8	0.00	0.00	4699.0	0.1	4.0	3.9
71	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1057.1	10.6	0.00	0.00	4701.0	0.1	3.9	3.9
70	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1144.9	9.5	0.00	0.00	4703.0	0.1	3.7	3.6
69	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1144.2	9.5	0.00	0.00	4703.1	0.1	3.7	3.6
68	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1143.5	9.5	0.00	0.00	4703.2	0.1	3.7	3.6
67	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1142.8	11.4	0.00	0.00	4705.2	0.1	3.7	3.6
66	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1230.7	10.3	0.00	0.00	4707.2	0.1	3.4	3.3
65	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1230.0	10.3	0.00	0.00	4707.3	0.1	3.4	3.4
64	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1229.3	10.2	0.00	0.00	4707.4	0.1	3.4	3.4
63	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1228.6	12.3	0.00	0.00	4709.5	0.1	3.4	3.4
62	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1316.5	11.0	0.00	0.00	4711.5	0.1	3.2	3.1
61	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1315.8	11.0	0.00	0.00	4711.6	0.1	3.2	3.2
60	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1315.1	11.0	0.00	0.00	4711.7	0.1	3.2	3.2
59	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1314.4	13.1	0.00	0.00	4713.7	0.1	3.2	3.2
58	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1402.3	11.7	0.00	0.00	4715.7	0.1	2.9	3.0
57	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1401.6	11.7	0.00	0.00	4715.8	0.1	2.9	3.0
56	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1400.9	11.7	0.00	0.00	4715.9	0.1	2.9	3.0
55	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1400.2	14.0	0.00	0.00	4717.9	0.1	2.9	3.0
54	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1488.1	12.4	0.00	0.00	4720.0	0.1	2.7	2.8
53	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1487.5	12.4	0.00	0.00	4720.0	0.1	2.7	2.8
52	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1486.7	12.4	0.00	0.00	4720.1	0.1	2.7	2.8
51	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1486.1	14.9	0.00	0.00	4722.2	0.1	2.7	2.8
50	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1574.0	13.1	0.00	0.00	4724.2	0.1	2.5	2.7





**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #001 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
49	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1573.3	13.1	0.00	0.00	4724.3	0.1	2.5	2.7
48	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1572.6	13.1	0.00	0.00	4724.4	0.1	2.5	2.7
47	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1571.9	15.7	0.00	0.00	4726.4	0.1	2.5	2.7
46	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1659.8	13.8	0.00	0.00	4728.4	0.0	2.3	2.6
45	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1659.1	13.8	0.00	0.00	4728.5	0.0	2.3	2.6
44	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1658.4	13.8	0.00	0.00	4728.6	0.0	2.3	2.6
43	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1657.7	16.6	0.00	0.00	4730.6	0.0	2.3	2.6
42	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1745.7	14.5	0.00	0.00	4732.7	0.0	2.1	2.4
41	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1745.0	14.5	0.00	0.00	4732.8	0.0	2.1	2.4
40	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1744.3	14.5	0.00	0.00	4732.9	0.0	2.1	2.4
39	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1743.6	17.4	0.00	0.00	4734.9	0.0	2.1	2.4
38	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1831.5	15.3	0.00	0.00	4736.9	0.0	1.9	2.3
37	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1830.9	15.3	0.00	0.00	4737.0	0.0	1.9	2.3
36	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1830.1	15.3	0.00	0.00	4737.1	0.0	1.9	2.3
35	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1829.5	18.3	0.00	0.00	4739.1	0.0	1.9	2.3
34	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1917.4	16.0	0.00	0.00	4741.2	0.0	1.8	2.2
33	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1916.7	16.0	0.00	0.00	4741.2	0.0	1.8	2.2
32	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1916.0	16.0	0.00	0.00	4741.3	0.0	1.8	2.2
31	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.11	0.4	1915.3	19.2	0.00	0.00	4743.4	0.0	1.8	2.3
30	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	2003.3	16.7	0.00	0.00	4745.4	0.0	1.6	2.2
29	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	2002.6	16.7	0.00	0.00	4745.5	0.0	1.6	2.2
28	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	2001.9	16.7	0.00	0.00	4745.6	0.0	1.6	2.2
27	181	1/2" MR	5.0	-15.2	0.100	1.60	0.11	0.1	2001.2	20.0	0.00	0.00	4746.1	0.0	1.6	2.2
26	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1986.0	16.6	0.00	0.00	4750.6	0.0	1.4	2.2
25	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1985.4	16.5	0.00	0.00	4750.7	0.0	1.4	2.2
24	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.11	0.0	1984.6	11.0	0.00	0.00	4750.8	0.0	1.4	2.2
23	94	Swivel 5t	0.2	-5.3	0.025	1.20	0.11	0.0	1983.6	19.8	0.00	0.00	4751.0	0.0	1.4	2.2
22	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.11	0.0	1978.2	11.0	0.00	0.00	4751.1	0.0	1.4	2.2
21	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1977.1	16.5	0.00	0.00	4751.2	0.0	1.4	2.2
20	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.11	0.0	1976.4	11.0	0.00	0.00	4751.3	0.0	1.4	2.2



## Global Southern Ocean HYPM Mooring Model Analysis designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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**Source:** 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

**Author:** 05-Aug-2014 13:56:04, pchua@(PCWIN64)

### Event #001 – Simulation Result, cont.

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
19	478	Dual Release	1.0	-61.0	0.288	1.20	0.11	0.2	1975.3	19.8	0.00	0.00	4751.9	0.0	1.4	2.2
18	480	1/2" dropchain	0.6	-6.8	0.024	1.60	0.11	0.0	1914.4	12.0	0.00	0.00	4752.7	0.0	1.3	2.3
17	76	ML 17t 1-1/4"	0.2	-4.8	0.026	1.50	0.11	0.0	1907.6	4.3	0.00	0.00	4753.1	0.0	1.3	2.3
16	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.11	0.0	1902.7	7.9	0.00	0.00	4753.3	0.0	1.3	2.3
15	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1901.2	15.8	0.00	0.00	4753.4	0.0	1.3	2.3
14	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1900.4	15.8	0.00	0.00	4753.5	0.0	1.3	2.3
13	181	1/2" MR	5.0	-15.2	0.100	1.60	0.11	0.1	1899.8	19.0	0.00	0.00	4754.0	0.0	1.3	2.3
12	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.11	0.0	1884.6	15.7	0.00	0.00	4758.5	0.0	1.1	2.3
11	64	EL 6t 7/8"	0.1	-1.0	0.012	1.50	0.11	0.0	1883.9	7.8	0.00	0.00	4758.6	0.0	1.1	2.3
10	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.11	0.0	1882.9	7.8	0.00	0.00	4758.7	0.0	1.1	2.3
9	113	Nystron-1"	20.7	-2.0	0.520	1.30	0.11	0.4	1881.4	11.2	0.67	3.36	4759.3	0.0	1.1	2.3
8	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.11	0.0	1879.4	7.8	0.00	0.00	4779.5	0.0	0.2	2.3
7	64	EL 6t 7/8"	0.1	-1.0	0.012	1.50	0.11	0.0	1877.8	7.8	0.00	0.00	4779.6	0.0	0.2	2.3
6	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.11	0.0	1876.8	7.8	0.00	0.00	4779.7	0.0	0.2	2.3
5	183	3/4" MR	5.0	-33.1	0.150	1.60	0.11	0.2	1875.3	7.8	0.00	0.00	4780.2	0.0	0.2	2.4
4	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.11	0.0	1842.2	10.2	0.00	0.00	4784.8	0.0	0.0	2.4
3	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.11	0.0	1841.2	15.3	0.00	0.00	4784.9	0.0	0.0	2.4
2	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.11	0.0	1840.4	7.7	0.00	0.00	4785.0	0.0	0.0	2.4
1	522	double MACE Anch	1.0	-2742.1	1.200	1.20	0.11	0.9	1838.9	30.6	0.00	0.00	4786.0	0.0	0.0	0.0

Max. 30.6% Static Tension at:

1	522	double MACE Anch	1.0	-2742.1	1.200	1.20	0.11	0.9	1838.9	30.6	0.00	0.00	4786.0	0.0	0.0	0.0
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Vert/Horiz Anchor Load : 1837 kg / 77 kg  
 Wet MACE Anchor Weight : 2742 kg  
 Safe MACE Anchor Weight : 2300 kg



## Global Southern Ocean HYPM Mooring Model Analysis designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

### Event #001 – Simulation Parameter

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
143	306	64" Sphere 1	2.087	2.087	2.087	0.50	0.50	0.50	0.24	3.2	0.0	0.0	0.0	1230.0	0.0	0.0	0.0	0.1
142	17	U-Joint	0.090	0.090	0.000	1.50	1.50	1.50	0.24	0.4	0.0	0.0	-0.0	-16.3	3.2	0.0	1230.0	0.1
141	141	1/2" EM chai	1.000	1.000	0.004	1.30	1.30	1.00	0.24	3.9	0.0	0.0	-0.0	-35.0	5.2	0.0	1199.7	0.3
140	13	ind. term	0.005	0.005	0.000	1.50	1.50	1.50	0.24	0.0	0.0	0.0	-0.0	-2.4	7.5	0.0	1178.7	0.4
139	103	5/16" NILSPI	0.048	0.048	0.000	1.10	1.10	0.00	0.24	0.2	0.0	0.0	-0.0	-1.1	7.6	0.0	1175.9	0.4
138	374	CTDMO-G P100	0.042	0.042	0.000	1.40	1.40	1.00	0.24	0.2	0.0	0.0	-0.0	-2.8	7.7	0.0	1175.2	0.4
137	103	5/16" NILSPI	0.048	0.048	0.000	1.10	1.10	0.00	0.24	0.2	0.0	0.0	-0.0	-1.1	7.9	0.0	1172.0	0.4
136	339	Wire Profile	0.070	0.070	0.000	0.50	0.50	0.50	0.24	0.1	0.0	0.0	-0.0	-0.5	8.0	0.0	1171.3	0.4
135	103	5/16" NILSPI	4.669	4.670	0.063	1.10	1.10	0.00	0.22	13.2	0.0	0.0	-0.2	-104.4	15.1	0.0	1118.7	1.1
134	103	5/16" NILSPI	4.763	4.765	0.125	1.10	1.10	0.00	0.19	10.0	0.0	0.0	-0.3	-106.5	26.5	0.0	1013.0	1.9
133	340	WFP	0.457	0.457	0.015	0.20	0.20	0.20	0.18	0.2	0.0	0.0	-0.0	0.0	31.3	0.0	959.5	1.9
132	103	5/16" NILSPI	4.761	4.765	0.187	1.10	1.10	0.00	0.17	7.8	0.0	0.0	-0.3	-106.5	35.5	0.0	906.2	2.6
131	103	5/16" NILSPI	6.755	6.766	0.382	1.10	1.10	0.00	0.15	8.5	0.0	0.0	-0.5	-151.2	43.7	0.0	777.0	3.9
130	338	Wire Profile	0.070	0.070	0.005	0.50	0.50	0.50	0.14	0.0	0.0	0.0	-0.0	-0.5	47.7	0.0	701.0	3.9
129	103	5/16" NILSPI	0.095	0.095	0.007	1.09	1.10	0.00	0.14	0.1	0.0	0.0	-0.0	-2.1	47.8	0.0	699.6	3.9
128	13	ind. term	0.005	0.005	0.000	1.50	1.50	1.50	0.14	0.0	0.0	0.0	-0.0	-2.4	47.9	0.0	698.4	3.9
127	15	coupler ec	0.020	0.020	0.001	1.50	1.50	1.50	0.14	0.0	0.0	0.0	-0.0	-6.0	47.9	0.0	696.0	3.9
125	479	Release Floa	0.591	0.592	0.041	1.20	1.20	0.90	0.14	0.7	0.0	0.0	-0.0	0.0	47.9	0.0	690.0	4.0
123	13	ind. term	0.005	0.005	0.000	1.50	1.50	1.50	0.14	0.0	0.0	0.0	-0.0	-2.4	48.6	0.0	689.9	4.0
122	256	CF14-1000	0.224	0.225	0.016	0.50	0.50	0.40	0.14	0.1	0.0	0.0	-0.0	13.0	48.7	0.0	687.5	4.0
120	103	5/16" NILSPI	0.190	0.191	0.013	1.09	1.10	0.00	0.14	0.2	0.0	0.0	-0.0	-4.3	48.9	0.0	698.5	4.0
119	13	ind. term	0.005	0.005	0.000	1.50	1.50	1.50	0.14	0.0	0.0	0.0	-0.0	-2.4	49.0	0.0	696.3	4.0
118	225	FL62" 6000m	1.887	1.887	1.887	0.50	0.50	0.50	0.14	0.9	0.0	0.0	0.0	692.0	49.0	0.0	693.9	4.0
117	13	ind. term	0.005	0.005	0.000	1.50	1.50	1.50	0.14	0.0	0.0	0.0	-0.0	-2.4	49.9	0.0	1385.9	2.1
116	103	5/16" NILSPI	0.095	0.095	0.003	1.10	1.10	0.00	0.14	0.1	0.0	0.0	-0.0	-2.1	50.0	0.0	1382.5	2.1
115	339	Wire Profile	0.070	0.070	0.003	0.50	0.50	0.50	0.14	0.0	0.0	0.0	-0.0	-0.5	50.0	0.0	1381.3	2.1
114	103	5/16" NILSPI	4.666	4.670	0.185	1.10	1.10	0.00	0.13	4.7	0.0	0.0	-0.2	-104.4	52.5	0.0	1328.6	2.5
113	103	5/16" NILSPI	4.760	4.765	0.222	1.10	1.10	0.00	0.12	4.2	0.0	0.0	-0.2	-106.5	57.0	0.0	1223.0	2.9
112	340	WFP	0.456	0.457	0.023	0.20	0.20	0.20	0.12	0.1	0.0	0.0	-0.0	0.0	59.1	0.0	1169.6	2.9



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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**Source:** 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg  
**Author:** 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #001 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
111	103	5/16" NILSPI	4.758	4.765	0.261	1.10	1.10	0.00	0.12	3.9	0.0	0.0	-0.2	-106.5	61.1	0.0	1116.3	3.4
110	103	5/16" NILSPI	6.751	6.766	0.449	1.09	1.10	0.00	0.11	5.0	0.0	0.0	-0.3	-151.2	65.5	0.0	987.2	4.3
109	338	Wire Profile	0.070	0.070	0.005	0.50	0.50	0.50	0.11	0.0	0.0	0.0	-0.0	-0.5	68.0	0.0	911.3	4.3
108	103	5/16" NILSPI	0.095	0.095	0.007	1.09	1.10	0.00	0.11	0.1	0.0	0.0	-0.0	-2.1	68.0	0.0	909.8	4.3
107	13	ind. term	0.005	0.005	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-2.4	68.1	0.0	908.7	4.3
106	300	Load Cage	0.299	0.300	0.022	1.30	1.30	0.90	0.11	0.3	0.0	0.0	-0.0	-60.0	68.1	0.0	906.3	4.3
105	32	AS 3t 5/8"	0.006	0.006	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	68.3	0.0	846.2	4.6
104	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	68.3	0.0	845.6	4.6
103	32	AS 3t 5/8"	0.006	0.006	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	68.3	0.0	844.8	4.6
102	181	1/2" MR	0.100	0.100	0.008	1.59	1.60	1.00	0.11	0.1	0.0	0.0	-0.0	-15.2	68.4	0.0	838.1	4.7
101	32	AS 3t 5/8"	0.006	0.006	0.001	1.49	1.50	1.49	0.11	0.0	0.0	0.0	-0.0	-0.7	68.4	0.0	829.0	4.7
100	53	PL 3t 3/4"	0.010	0.010	0.001	1.49	1.50	1.49	0.11	0.0	0.0	0.0	-0.0	-0.7	68.5	0.0	828.3	4.7
99	32	AS 3t 5/8"	0.006	0.006	0.001	1.49	1.50	1.49	0.11	0.0	0.0	0.0	-0.0	-0.7	68.5	0.0	827.6	4.7
98	274	HR17-4 seria	0.997	1.000	0.083	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	68.5	0.0	826.9	4.7
97	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	68.9	0.0	914.9	4.3
96	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	68.9	0.0	914.2	4.3
95	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	68.9	0.0	913.5	4.3
94	274	HR17-4 seria	0.997	1.000	0.075	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	68.9	0.0	912.8	4.3
93	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	69.3	0.0	1000.8	4.0
92	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	69.3	0.0	1000.1	4.0
91	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	69.3	0.0	999.4	4.0
90	103	5/16" NILSPI	0.285	0.286	0.020	1.09	1.10	0.00	0.11	0.2	0.0	0.0	-0.0	-6.4	69.4	0.0	995.6	4.0
89	491	Parachute	1.500	1.500	1.500	0.50	0.50	1.33	0.11	0.5	0.0	0.0	0.0	0.0	69.5	0.0	992.3	4.0
88	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.0	0.0	992.3	4.0
87	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.0	0.0	991.6	4.0
86	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.0	0.0	990.9	4.0
85	103	5/16" NILSPI	0.095	0.095	0.007	1.09	1.10	0.00	0.11	0.1	0.0	0.0	-0.0	-2.1	70.0	0.0	989.3	4.1
84	491	Parachute	1.500	1.500	1.500	0.50	0.50	1.33	0.11	0.5	0.0	0.0	0.0	0.0	70.1	0.0	988.1	4.1
83	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.6	0.0	988.1	4.1



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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**Source:** 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg  
**Author:** 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #001 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m^2	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
82	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.6	0.0	987.4	4.1
81	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.6	0.0	986.7	4.1
80	181	1/2" MR	0.100	0.100	0.007	1.60	1.60	1.00	0.11	0.1	0.0	0.0	-0.0	-15.2	70.6	0.0	980.0	4.1
78	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.7	0.0	970.8	4.2
77	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.7	0.0	970.2	4.2
76	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	70.7	0.0	969.4	4.2
75	274	HR17-4 seria	0.997	1.000	0.073	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	70.7	0.0	968.8	4.2
74	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.1	0.0	1056.7	3.8
73	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.1	0.0	1056.1	3.9
72	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.1	0.0	1055.3	3.9
71	274	HR17-4 seria	0.998	1.000	0.067	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	71.1	0.0	1054.7	3.9
70	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.5	0.0	1142.7	3.6
69	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.5	0.0	1142.0	3.6
68	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.5	0.0	1141.3	3.6
67	274	HR17-4 seria	0.998	1.000	0.063	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	71.5	0.0	1140.6	3.6
66	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.9	0.0	1228.6	3.3
65	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.9	0.0	1227.9	3.4
64	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	71.9	0.0	1227.2	3.4
63	274	HR17-4 seria	0.998	1.000	0.059	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	71.9	0.0	1226.5	3.4
62	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	72.3	0.0	1314.5	3.1
61	53	PL 3t 3/4"	0.010	0.010	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	72.3	0.0	1313.8	3.2
60	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	72.3	0.0	1313.1	3.2
59	274	HR17-4 seria	0.998	1.000	0.055	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	72.3	0.0	1312.4	3.2
58	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	72.7	0.0	1400.4	3.0
57	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	72.7	0.0	1399.7	3.0
56	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	72.8	0.0	1399.0	3.0
55	274	HR17-4 seria	0.999	1.000	0.052	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	72.8	0.0	1398.3	3.0
54	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	73.1	0.0	1486.3	2.8
53	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	73.2	0.0	1485.7	2.8



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #001 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
52	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	73.2	0.0	1484.9	2.8
51	274	HR17-4 seria	0.999	1.000	0.049	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	73.2	0.0	1484.3	2.8
50	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	73.6	0.0	1572.2	2.7
49	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	73.6	0.0	1571.6	2.7
48	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	73.6	0.0	1570.8	2.7
47	274	HR17-4 seria	0.999	1.000	0.047	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	73.6	0.0	1570.2	2.7
46	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.0	0.0	1658.2	2.6
45	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.0	0.0	1657.5	2.6
44	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.0	0.0	1656.8	2.6
43	274	HR17-4 seria	0.999	1.000	0.045	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	74.0	0.0	1656.1	2.6
42	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.4	0.0	1744.1	2.4
41	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.4	0.0	1743.4	2.4
40	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.4	0.0	1742.7	2.4
39	274	HR17-4 seria	0.999	1.000	0.043	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	74.4	0.0	1742.0	2.4
38	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.8	0.0	1830.0	2.3
37	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.8	0.0	1829.3	2.3
36	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	74.8	0.0	1828.6	2.3
35	274	HR17-4 seria	0.999	1.000	0.041	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	74.8	0.0	1827.9	2.3
34	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.2	0.0	1915.9	2.2
33	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.2	0.0	1915.3	2.2
32	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.2	0.0	1914.5	2.2
31	274	HR17-4 seria	0.999	1.000	0.039	0.60	0.60	1.06	0.11	0.4	0.0	0.0	-0.0	88.0	75.2	0.0	1913.9	2.3
30	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.6	0.0	2001.8	2.2
29	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.6	0.0	2001.2	2.2
28	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.6	0.0	2000.4	2.2
27	181	1/2" MR	0.100	0.100	0.004	1.60	1.60	1.00	0.11	0.1	0.0	0.0	-0.0	-15.2	75.7	0.0	1993.7	2.2
26	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.7	0.0	1984.6	2.2
25	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.7	0.0	1983.9	2.2
24	33	AS 5t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.1	75.7	0.0	1983.2	2.2



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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**Source:** 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg  
**Author:** 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #001 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
23	94	Swivel 5t	0.025	0.025	0.001	1.20	1.20	1.20	0.11	0.0	0.0	0.0	-0.0	-5.3	75.7	0.0	1982.1	2.2
22	33	AS 5t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.1	75.8	0.0	1976.8	2.2
21	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	75.8	0.0	1975.7	2.2
20	33	AS 5t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.1	75.8	0.0	1974.9	2.2
19	478	Dual Release	0.288	0.288	0.011	1.20	1.20	0.90	0.11	0.2	0.0	0.0	-0.0	-61.0	75.8	0.0	1973.9	2.2
18	480	1/2" dropcha	0.024	0.024	0.001	1.60	1.60	1.00	0.11	0.0	0.0	0.0	-0.0	-6.8	76.0	0.0	1912.9	2.3
17	76	ML 17t 1-1/4	0.025	0.026	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-4.8	76.0	0.0	1906.1	2.3
16	34	AS 6t 7/8"	0.012	0.012	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.6	76.1	0.0	1901.2	2.3
15	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	76.1	0.0	1899.7	2.3
14	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	76.1	0.0	1898.9	2.3
13	181	1/2" MR	0.100	0.100	0.004	1.60	1.60	1.00	0.11	0.1	0.0	0.0	-0.0	-15.2	76.1	0.0	1892.2	2.3
12	32	AS 3t 5/8"	0.006	0.006	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	76.2	0.0	1883.1	2.3
11	64	EL 6t 7/8"	0.012	0.012	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.0	76.2	0.0	1882.4	2.3
10	34	AS 6t 7/8"	0.012	0.012	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.6	76.2	0.0	1881.4	2.3
9	113	Nystron-1"	0.520	0.520	0.021	1.30	1.30	0.02	0.11	0.4	0.0	0.0	-0.0	-2.0	76.4	0.0	1878.9	2.3
8	34	AS 6t 7/8"	0.012	0.012	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.6	76.7	0.0	1877.8	2.3
7	64	EL 6t 7/8"	0.012	0.012	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.0	76.7	0.0	1876.3	2.3
6	34	AS 6t 7/8"	0.012	0.012	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.6	76.7	0.0	1875.2	2.3
5	183	3/4" MR	0.150	0.150	0.006	1.60	1.60	1.00	0.11	0.2	0.0	0.0	-0.0	-33.0	76.8	0.0	1860.5	2.4
4	33	AS 5t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.1	76.8	0.0	1840.6	2.4
3	53	PL 3t 3/4"	0.010	0.010	0.000	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-0.7	76.9	0.0	1839.6	2.4
2	34	AS 6t 7/8"	0.012	0.012	0.001	1.50	1.50	1.50	0.11	0.0	0.0	0.0	-0.0	-1.6	76.9	0.0	1838.8	2.4
1	522	double MACE	1.200	1.200	0.000	1.20	1.20	1.20	0.11	0.9	0.0	0.0	0.0	-2742.1	76.9	0.0	1837.3	0.0



## Global Southern Ocean HYPM Mooring Model Analysis

designed for 4786m Depth

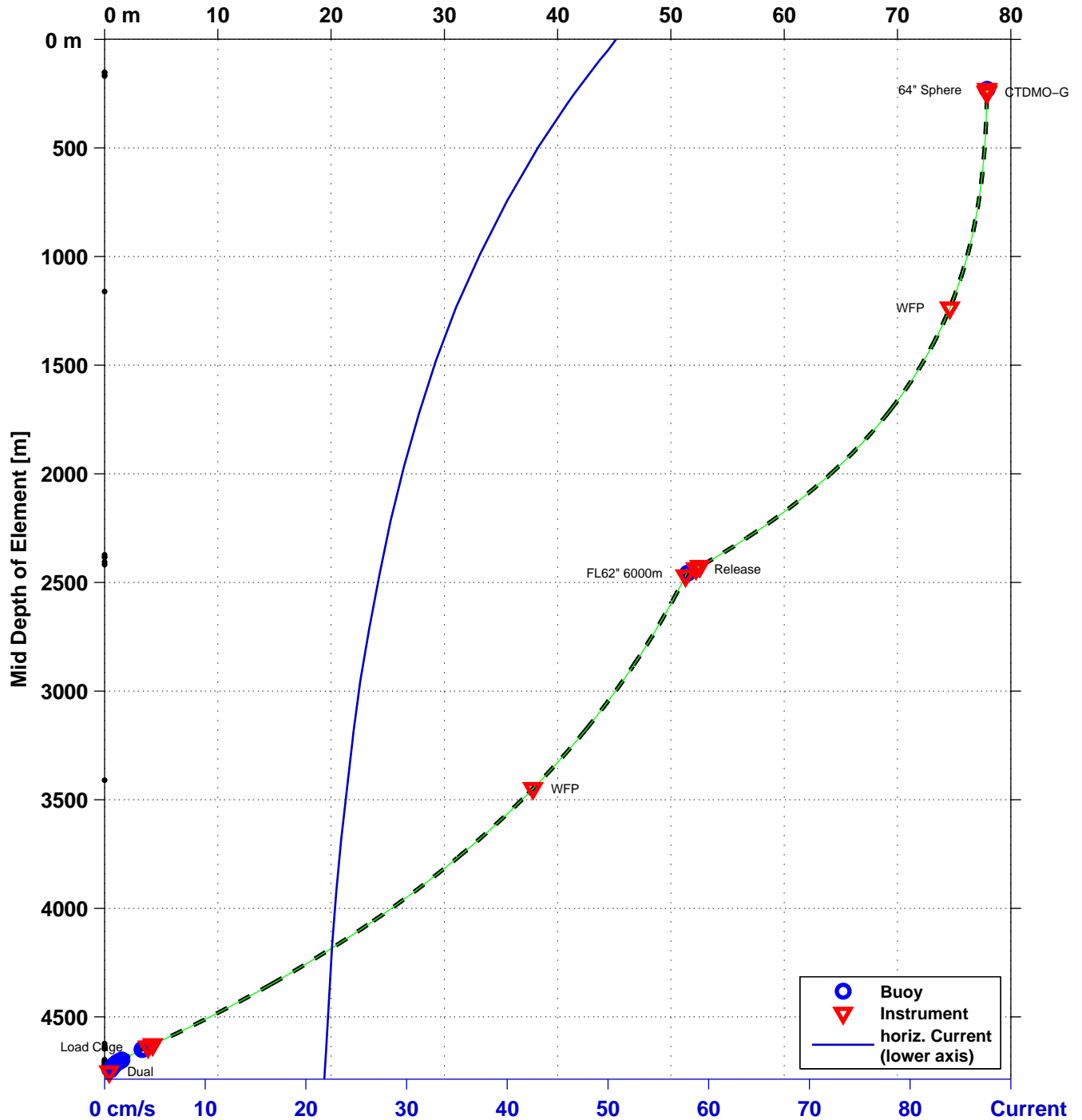


By: P. Chua	05-Aug-2014	DCN: 3201-00010	REV: B	REF.DES. GS02HYPM
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

**Event #002 – Subduction [m]: max. 78m, Top at 230m**  
 Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf



Event #002: Vert / Horiz anchor load: 1802 kg / 291 kg  
 Vert / Horiz anchor safety : 125 % / 120 %,  
 Safe Wet MACE anchor weight: 2300 kg, (max. 500 kg or Horiz. safety)  
 Wet / Dry MACE anchor weight : 2742 kg / 3170 kg





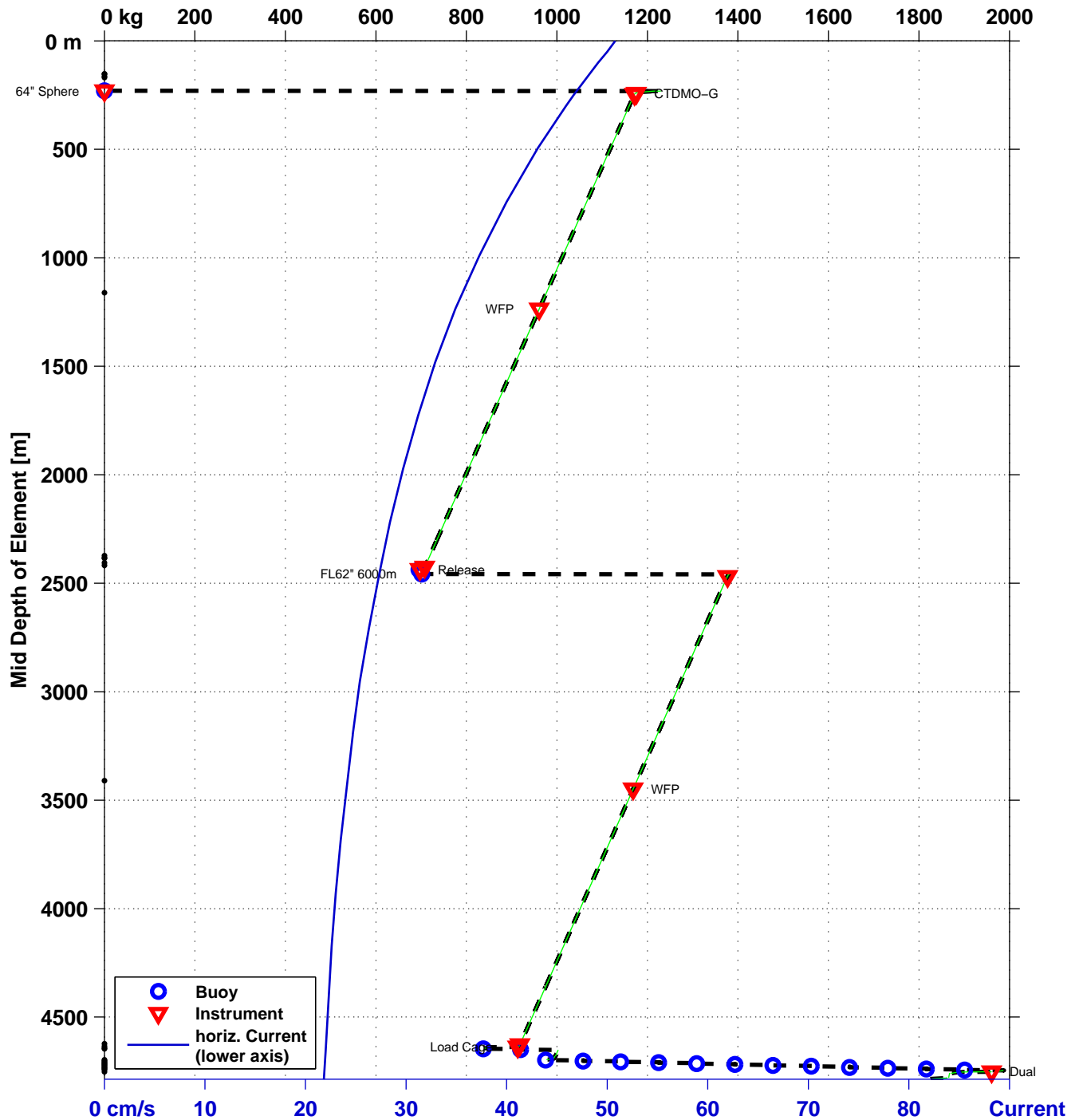
## Global Southern Ocean HYPM Mooring Model Analysis designed for 4786m Depth



By: P. Chua	05-Aug-2014	DCN: 3201-00010	REV: B	REF.DES. GS02HYPM
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Source: 05-Aug-2014 13:55:53, ...Projects\Paul's m-files\OOI\Global\_South\gs2014hyps.cfg  
 Author: 05-Aug-2014 13:56:03, pchua@(PCWIN64)

### Event #002 – Tension [kg] Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf



Event #002: Vert / Horiz anchor load : 1802 kg / 291 kg  
 Vert / Horiz anchor safety : 125 % / 120 %,  
 Safe Wet MACE anchor weight : 2300 kg, (max. 500 kg or Horiz. safety)  
 Wet / Dry MACE anchor weight : 2742 kg / 3170 kg



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Result**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]	
143	306	64" Sphere	1000m	2.3	1230.0	2.087	0.50	0.47	12.1	0.0	0.0	0.00	0.00	229.0	77.9	791.3	0.6
142	17	U-Joint		0.3	-16.3	0.090	1.50	0.47	1.6	1230.1	7.7	0.00	0.00	231.4	77.9	791.3	0.6
141	141	1/2" EM chain		5.0	-35.0	1.000	1.30	0.47	15.0	1213.8	12.1	0.00	0.00	232.0	77.9	791.3	1.2
140	13	ind. term		0.1	-2.4	0.005	1.50	0.47	0.1	1178.8	7.4	0.00	0.00	236.6	77.9	791.2	1.4
139	103	5/16" NILSPIN		5.0	-1.1	0.048	1.10	0.47	0.6	1176.4	25.3	0.01	0.26	237.1	77.9	791.2	1.4
138	374	CTDMO-G P1000m		0.0	-2.8	0.042	1.40	0.47	0.7	1175.3	11.8	0.00	0.00	241.6	77.9	791.1	1.4
137	103	5/16" NILSPIN		5.0	-1.1	0.048	1.10	0.47	0.6	1172.5	25.2	0.01	0.26	242.1	77.9	791.1	1.5
136	339	Wire Profiler St		0.0	-0.5	0.070	0.50	0.47	0.4	1171.5	19.5	0.00	0.00	246.7	77.9	791.0	1.5
135	103	5/16" NILSPIN		491.2	-104.4	4.670	1.10	0.43	50.2	1171.0	25.2	1.22	0.25	247.2	77.9	791.0	4.4
134	103	5/16" NILSPIN		501.1	-106.5	4.765	1.10	0.37	38.0	1066.7	22.9	1.12	0.22	737.7	77.2	765.6	7.1
133	340	WFP		0.0	0.0	0.457	0.20	0.35	0.6	960.8	9.6	0.00	0.00	1235.7	74.6	715.4	7.1
132	103	5/16" NILSPIN		501.0	-106.5	4.765	1.10	0.33	29.0	960.8	20.6	1.01	0.20	1236.2	74.6	715.4	10.0
131	103	5/16" NILSPIN		711.2	-151.2	6.766	1.10	0.29	31.2	855.6	18.4	1.23	0.17	1731.6	69.0	640.8	14.7
130	338	Wire Profiler St		0.0	-0.5	0.070	0.50	0.27	0.2	708.0	11.8	0.00	0.00	2425.9	52.6	489.7	14.7
129	103	5/16" NILSPIN		10.0	-2.1	0.095	1.10	0.27	0.4	707.5	15.2	0.02	0.16	2426.4	52.6	489.7	14.8
128	13	ind. term		0.1	-2.4	0.005	1.50	0.27	0.0	705.5	4.4	0.00	0.00	2435.6	52.2	487.2	14.8
127	15	coupler ec		0.2	-6.0	0.020	1.50	0.27	0.1	703.1	4.4	0.00	0.00	2435.8	52.2	487.1	14.9
125	479	Release Float		1.0	0.0	0.592	1.20	0.27	2.8	697.4	7.0	0.00	0.00	2436.4	52.2	487.1	15.0
123	13	ind. term		0.1	-2.4	0.005	1.50	0.27	0.0	697.4	4.4	0.00	0.00	2436.9	52.2	486.8	15.2
122	256	CF14-1000		0.0	13.0	0.225	0.50	0.27	0.5	695.1	11.6	0.00	0.00	2436.9	52.2	486.8	15.3
120	103	5/16" NILSPIN		20.0	-4.3	0.191	1.10	0.27	0.7	707.7	15.2	0.03	0.16	2437.4	52.2	486.8	15.2
119	13	ind. term		0.1	-2.4	0.005	1.50	0.27	0.0	703.6	4.4	0.00	0.00	2456.3	51.5	481.6	15.2
118	225	FL62" 6000m		2.6	692.0	1.887	0.50	0.27	3.7	701.3	7.0	0.00	0.00	2457.7	51.5	481.5	15.3
117	13	ind. term		0.1	-2.4	0.005	1.50	0.27	0.0	1381.4	8.6	0.00	0.00	2458.9	51.4	480.9	7.8
116	103	5/16" NILSPIN		10.0	-2.1	0.095	1.10	0.27	0.4	1379.1	29.6	0.03	0.31	2459.5	51.4	480.8	7.9
115	339	Wire Profiler St		0.0	-0.5	0.070	0.50	0.27	0.2	1377.0	22.9	0.00	0.00	2468.9	51.3	479.5	7.9
114	103	5/16" NILSPIN		491.4	-104.4	4.670	1.10	0.26	18.2	1376.5	29.6	1.44	0.29	2469.4	51.3	479.5	9.4
113	103	5/16" NILSPIN		501.4	-106.5	4.765	1.10	0.25	16.2	1273.3	27.4	1.35	0.27	2955.3	45.7	405.9	11.0
112	340	WFP		0.0	0.0	0.457	0.20	0.24	0.3	1168.5	11.7	0.00	0.00	3448.3	37.8	317.3	11.0
111	103	5/16" NILSPIN		501.2	-106.5	4.765	1.10	0.24	14.4	1168.5	25.1	1.24	0.25	3448.8	37.8	317.3	12.9



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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**Source:** 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

**Author:** 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
110	103	5/16" NILSPIN	711.6	-151.2	6.766	1.10	0.22	18.1	1064.4	22.9	1.56	0.22	3939.1	26.9	213.6	16.2
109	338	Wire Profiler St	0.0	-0.5	0.070	0.50	0.22	0.1	918.2	15.3	0.00	0.00	4627.5	4.2	35.7	16.2
108	103	5/16" NILSPIN	10.0	-2.1	0.095	1.10	0.22	0.2	917.7	19.7	0.02	0.20	4628.0	4.2	35.7	16.3
107	13	ind. term	0.1	-2.4	0.005	1.50	0.22	0.0	915.6	5.7	0.00	0.00	4637.1	3.8	32.9	16.3
106	300	Load Cage	1.5	-60.0	0.300	1.30	0.22	1.0	913.3	9.1	0.00	0.00	4637.9	3.8	32.8	16.3
105	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	856.0	7.1	0.00	0.00	4638.7	3.8	32.4	17.5
104	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	855.4	7.1	0.00	0.00	4638.7	3.8	32.4	17.5
103	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	854.6	7.1	0.00	0.00	4638.8	3.8	32.3	17.5
102	181	1/2" MR	5.0	-15.2	0.100	1.60	0.22	0.4	854.0	8.5	0.00	0.00	4639.4	3.8	32.3	17.8
101	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	839.5	7.0	0.00	0.00	4643.7	3.5	30.8	17.9
100	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	838.9	7.0	0.00	0.00	4643.7	3.5	30.8	17.9
99	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	838.2	7.0	0.00	0.00	4643.8	3.5	30.8	17.9
98	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	837.6	8.4	0.00	0.00	4645.9	3.5	30.7	17.9
97	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	921.8	7.7	0.00	0.00	4647.7	3.3	29.5	16.3
96	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	921.1	7.7	0.00	0.00	4647.8	3.3	29.5	16.4
95	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	920.4	7.7	0.00	0.00	4647.9	3.3	29.5	16.4
94	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	919.8	9.2	0.00	0.00	4649.9	3.3	29.4	16.4
93	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1004.6	8.4	0.00	0.00	4651.8	3.2	28.3	15.1
92	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1003.9	8.4	0.00	0.00	4651.9	3.2	28.3	15.1
91	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1003.2	8.4	0.00	0.00	4651.9	3.1	28.3	15.1
90	103	5/16" NILSPIN	30.1	-6.4	0.286	1.10	0.22	0.7	1002.6	21.5	0.07	0.22	4652.5	3.1	28.2	15.2
89	491	Parachute	0.0	0.0	1.500	0.50	0.22	1.9	996.4	10.0	0.00	0.00	4681.0	2.1	20.4	15.2
88	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	996.9	8.3	0.00	0.00	4681.0	2.1	20.4	15.3
87	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	996.3	8.3	0.00	0.00	4681.1	2.1	20.4	15.4
86	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	995.6	8.3	0.00	0.00	4681.2	2.1	20.3	15.4
85	103	5/16" NILSPIN	10.0	-2.1	0.095	1.10	0.22	0.2	994.9	21.4	0.02	0.22	4681.7	2.1	20.3	15.4
84	491	Parachute	0.0	0.0	1.500	0.50	0.22	1.9	992.9	9.9	0.00	0.00	4690.9	1.7	17.7	15.4
83	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	993.4	8.3	0.00	0.00	4690.9	1.7	17.7	15.5
82	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	992.8	8.3	0.00	0.00	4691.0	1.7	17.6	15.5
81	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	992.1	8.3	0.00	0.00	4691.1	1.7	17.6	15.6



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
80	181	1/2" MR	5.0	-15.2	0.100	1.60	0.22	0.4	991.4	9.9	0.00	0.00	4691.6	1.7	17.6	15.8
78	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	976.8	8.1	0.00	0.00	4696.0	1.5	16.2	15.8
77	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	976.2	8.1	0.00	0.00	4696.1	1.5	16.2	15.8
76	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	975.5	8.1	0.00	0.00	4696.1	1.5	16.2	15.9
75	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	974.8	9.7	0.00	0.00	4698.2	1.5	16.2	15.9
74	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1059.8	8.8	0.00	0.00	4700.1	1.4	15.1	14.7
73	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1059.1	8.8	0.00	0.00	4700.1	1.4	15.1	14.7
72	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1058.4	8.8	0.00	0.00	4700.2	1.4	15.0	14.7
71	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1057.8	10.6	0.00	0.00	4702.3	1.4	15.0	14.7
70	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1143.2	9.5	0.00	0.00	4704.2	1.2	14.0	13.6
69	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1142.5	9.5	0.00	0.00	4704.2	1.2	14.0	13.7
68	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1141.8	9.5	0.00	0.00	4704.3	1.2	14.0	13.7
67	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1141.2	11.4	0.00	0.00	4706.4	1.2	13.9	13.7
66	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1226.9	10.2	0.00	0.00	4708.3	1.1	13.0	12.8
65	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1226.2	10.2	0.00	0.00	4708.4	1.1	13.0	12.8
64	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1225.5	10.2	0.00	0.00	4708.5	1.1	13.0	12.8
63	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1224.9	12.2	0.00	0.00	4710.5	1.1	12.9	12.8
62	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1310.9	10.9	0.00	0.00	4712.4	1.0	12.1	12.0
61	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1310.2	10.9	0.00	0.00	4712.5	1.0	12.0	12.0
60	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1309.5	10.9	0.00	0.00	4712.6	1.0	12.0	12.0
59	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1308.8	13.1	0.00	0.00	4714.6	1.0	12.0	12.0
58	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1395.0	11.6	0.00	0.00	4716.6	0.9	11.2	11.4
57	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1394.4	11.6	0.00	0.00	4716.7	0.9	11.2	11.4
56	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1393.7	11.6	0.00	0.00	4716.7	0.9	11.1	11.4
55	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1393.0	13.9	0.00	0.00	4718.8	0.9	11.1	11.4
54	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1479.4	12.3	0.00	0.00	4720.7	0.8	10.3	10.8
53	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1478.8	12.3	0.00	0.00	4720.8	0.8	10.3	10.8
52	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1478.0	12.3	0.00	0.00	4720.9	0.8	10.3	10.8
51	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1477.4	14.8	0.00	0.00	4722.9	0.8	10.3	10.8
50	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1564.0	13.0	0.00	0.00	4724.9	0.8	9.5	10.2



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
49	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1563.3	13.0	0.00	0.00	4725.0	0.8	9.5	10.2
48	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1562.6	13.0	0.00	0.00	4725.1	0.8	9.5	10.2
47	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1561.9	15.6	0.00	0.00	4727.1	0.8	9.5	10.3
46	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1648.6	13.7	0.00	0.00	4729.1	0.7	8.8	9.8
45	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1648.0	13.7	0.00	0.00	4729.2	0.7	8.8	9.8
44	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1647.2	13.7	0.00	0.00	4729.3	0.7	8.8	9.8
43	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1646.6	16.5	0.00	0.00	4731.3	0.7	8.7	9.8
42	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1733.4	14.4	0.00	0.00	4733.3	0.6	8.1	9.3
41	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1732.7	14.4	0.00	0.00	4733.3	0.6	8.1	9.3
40	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1732.0	14.4	0.00	0.00	4733.4	0.6	8.0	9.3
39	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1731.3	17.3	0.00	0.00	4735.5	0.6	8.0	9.3
38	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1818.2	15.2	0.00	0.00	4737.4	0.6	7.4	8.9
37	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1817.6	15.1	0.00	0.00	4737.5	0.6	7.4	9.0
36	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1816.9	15.1	0.00	0.00	4737.6	0.6	7.3	9.0
35	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1816.2	18.2	0.00	0.00	4739.7	0.6	7.3	9.0
34	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1903.2	15.9	0.00	0.00	4741.6	0.5	6.7	8.6
33	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1902.5	15.9	0.00	0.00	4741.7	0.5	6.7	8.6
32	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1901.8	15.8	0.00	0.00	4741.8	0.5	6.7	8.6
31	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.22	1.5	1901.2	19.0	0.00	0.00	4743.8	0.5	6.7	8.6
30	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1988.2	16.6	0.00	0.00	4745.8	0.5	6.1	8.3
29	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1987.6	16.6	0.00	0.00	4745.9	0.5	6.1	8.3
28	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1986.8	16.6	0.00	0.00	4746.0	0.5	6.1	8.3
27	181	1/2" MR	5.0	-15.2	0.100	1.60	0.22	0.4	1986.2	19.9	0.00	0.00	4746.5	0.5	6.0	8.3
26	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1971.2	16.4	0.00	0.00	4751.0	0.4	5.3	8.4
25	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1970.5	16.4	0.00	0.00	4751.1	0.4	5.3	8.4
24	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.22	0.0	1969.8	10.9	0.00	0.00	4751.2	0.4	5.3	8.4
23	94	Swivel 5t	0.2	-5.3	0.025	1.20	0.22	0.1	1968.7	19.7	0.00	0.00	4751.4	0.4	5.3	8.4
22	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.22	0.0	1963.4	10.9	0.00	0.00	4751.5	0.4	5.2	8.4
21	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1962.4	16.4	0.00	0.00	4751.6	0.4	5.2	8.4
20	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.22	0.0	1961.6	10.9	0.00	0.00	4751.7	0.4	5.2	8.4



### Global Southern Ocean HYPM Mooring Model Analysis designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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**Source:** 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

**Author:** 05-Aug-2014 13:56:04, pchua@(PCWIN64)

### Event #002 – Simulation Result, cont.

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
19	478	Dual Release	1.0	-61.0	0.288	1.20	0.22	0.9	1960.6	19.6	0.00	0.00	4752.3	0.4	5.2	8.4
18	480	1/2" dropchain	0.6	-6.8	0.024	1.60	0.22	0.1	1900.3	11.9	0.00	0.00	4753.1	0.4	5.1	8.7
17	76	ML 17t 1-1/4"	0.2	-4.8	0.026	1.50	0.22	0.1	1893.5	4.3	0.00	0.00	4753.5	0.4	5.0	8.7
16	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.22	0.0	1888.7	7.9	0.00	0.00	4753.6	0.4	4.9	8.8
15	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1887.2	15.7	0.00	0.00	4753.7	0.4	4.9	8.8
14	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1886.5	15.7	0.00	0.00	4753.8	0.4	4.9	8.8
13	181	1/2" MR	5.0	-15.2	0.100	1.60	0.22	0.4	1885.8	18.9	0.00	0.00	4754.4	0.4	4.9	8.9
12	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.22	0.0	1870.8	15.6	0.00	0.00	4758.8	0.3	4.1	8.9
11	64	EL 6t 7/8"	0.1	-1.0	0.012	1.50	0.22	0.0	1870.2	7.8	0.00	0.00	4758.9	0.3	4.1	8.9
10	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.22	0.0	1869.1	7.8	0.00	0.00	4759.0	0.3	4.1	8.9
9	113	Nystron-1"	20.7	-2.0	0.520	1.30	0.22	1.7	1867.6	11.1	0.67	3.33	4759.6	0.3	4.1	8.9
8	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.22	0.0	1865.7	7.8	0.00	0.00	4779.5	0.1	0.9	8.9
7	64	EL 6t 7/8"	0.1	-1.0	0.012	1.50	0.22	0.0	1864.1	7.8	0.00	0.00	4779.6	0.1	0.9	9.0
6	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.22	0.0	1863.1	7.8	0.00	0.00	4779.8	0.1	0.8	9.0
5	183	3/4" MR	5.0	-33.1	0.150	1.60	0.22	0.6	1861.6	7.8	0.00	0.00	4780.3	0.1	0.8	9.1
4	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.22	0.0	1828.9	10.2	0.00	0.00	4784.8	0.0	0.0	9.2
3	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.22	0.0	1827.9	15.2	0.00	0.00	4784.9	0.0	0.0	9.2
2	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.22	0.0	1827.2	7.6	0.00	0.00	4785.0	0.0	0.0	9.2
1	522	double MACE Anch	1.0	-2742.1	1.200	1.20	0.22	3.7	1825.6	30.4	0.00	0.00	4786.0	0.0	0.0	0.0

Max. 30.4% Static Tension at:

1	522	double MACE Anch	1.0	-2742.1	1.200	1.20	0.22	3.7	1825.6	30.4	0.00	0.00	4786.0	0.0	0.0	0.0
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Vert/Horiz Anchor Load : 1802 kg / 291 kg  
 Wet MACE Anchor Weight : 2742 kg  
 Safe MACE Anchor Weight : 2300 kg



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Parameter**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
143	306	64" Sphere 1	2.087	2.087	2.087	0.50	0.50	0.50	0.47	12.1	0.0	0.0	0.0	1230.0	0.0	0.0	0.0	0.6
142	17	U-Joint	0.090	0.090	0.001	1.50	1.50	1.50	0.47	1.6	0.0	0.0	-0.0	-16.3	12.1	0.0	1230.0	0.6
141	141	1/2" EM chai	1.000	1.000	0.016	1.30	1.30	1.00	0.47	15.0	0.0	0.0	-0.2	-35.0	19.6	0.0	1199.6	1.2
140	13	ind. term	0.005	0.005	0.000	1.50	1.50	1.50	0.47	0.1	0.0	0.0	-0.0	-2.4	28.6	0.0	1178.4	1.4
139	103	5/16" NILSPI	0.048	0.048	0.001	1.10	1.10	0.00	0.47	0.6	0.0	0.0	-0.0	-1.1	28.9	0.0	1175.6	1.4
138	374	CTDMO-G P100	0.042	0.042	0.001	1.40	1.40	1.00	0.47	0.7	0.0	0.0	-0.0	-2.8	29.3	0.0	1175.0	1.4
137	103	5/16" NILSPI	0.048	0.048	0.001	1.10	1.10	0.00	0.47	0.6	0.0	0.0	-0.0	-1.1	30.2	0.0	1171.7	1.5
136	339	Wire Profile	0.070	0.070	0.002	0.50	0.50	0.50	0.47	0.4	0.0	0.0	-0.0	-0.5	30.6	0.0	1171.1	1.5
135	103	5/16" NILSPI	4.663	4.670	0.241	1.10	1.10	0.00	0.43	50.2	0.0	0.0	-2.5	-104.4	57.3	0.0	1117.4	4.4
134	103	5/16" NILSPI	4.741	4.765	0.477	1.09	1.10	0.00	0.37	38.0	0.0	0.0	-3.8	-106.5	101.1	0.0	1008.7	7.1
133	340	WFP	0.453	0.457	0.057	0.20	0.20	0.20	0.35	0.6	0.0	0.0	-0.1	0.0	119.2	0.0	953.4	7.1
132	103	5/16" NILSPI	4.711	4.765	0.710	1.07	1.10	0.00	0.33	29.0	0.0	0.0	-4.3	-106.5	134.8	0.0	898.1	10.0
131	103	5/16" NILSPI	6.610	6.766	1.438	1.04	1.10	0.00	0.29	31.2	0.0	0.0	-6.6	-151.2	165.1	0.0	763.8	14.7
130	338	Wire Profile	0.068	0.070	0.018	0.48	0.50	0.48	0.27	0.2	0.0	0.0	-0.0	-0.5	179.9	0.0	684.8	14.7
129	103	5/16" NILSPI	0.092	0.095	0.024	1.02	1.10	0.00	0.27	0.4	0.0	0.0	-0.1	-2.1	180.2	0.0	683.2	14.8
128	13	ind. term	0.005	0.005	0.001	1.45	1.50	1.45	0.27	0.0	0.0	0.0	-0.0	-2.4	180.4	0.0	682.0	14.8
127	15	coupler ec	0.019	0.020	0.005	1.45	1.50	1.45	0.27	0.1	0.0	0.0	-0.0	-6.0	180.5	0.0	679.6	14.9
125	479	Release Floa	0.572	0.592	0.153	1.16	1.20	0.87	0.27	2.8	0.0	0.0	-0.7	0.0	180.6	0.0	673.6	15.0
123	13	ind. term	0.005	0.005	0.001	1.45	1.50	1.45	0.27	0.0	0.0	0.0	-0.0	-2.4	183.4	0.0	672.9	15.2
122	256	CF14-1000	0.217	0.225	0.059	0.48	0.50	0.39	0.27	0.5	0.0	0.0	-0.1	13.0	183.4	0.0	670.5	15.3
120	103	5/16" NILSPI	0.184	0.191	0.050	1.02	1.10	0.00	0.27	0.7	0.0	0.0	-0.2	-4.3	184.2	0.0	681.3	15.2
119	13	ind. term	0.005	0.005	0.001	1.45	1.50	1.45	0.27	0.0	0.0	0.0	-0.0	-2.4	184.6	0.0	678.9	15.2
118	225	FL62" 6000m	1.887	1.887	1.887	0.50	0.50	0.50	0.27	3.7	0.0	0.0	0.0	692.0	184.6	0.0	676.5	15.3
117	13	ind. term	0.005	0.005	0.001	1.49	1.50	1.49	0.27	0.0	0.0	0.0	-0.0	-2.4	188.3	0.0	1368.5	7.8
116	103	5/16" NILSPI	0.094	0.095	0.013	1.08	1.10	0.00	0.27	0.4	0.0	0.0	-0.1	-2.1	188.6	0.0	1365.2	7.9
115	339	Wire Profile	0.069	0.070	0.010	0.50	0.50	0.50	0.27	0.2	0.0	0.0	-0.0	-0.5	188.8	0.0	1364.0	7.9
114	103	5/16" NILSPI	4.617	4.670	0.699	1.07	1.10	0.00	0.26	18.2	0.0	0.0	-2.7	-104.4	198.2	0.0	1310.0	9.4
113	103	5/16" NILSPI	4.690	4.765	0.841	1.06	1.10	0.00	0.25	16.2	0.0	0.0	-2.9	-106.5	215.3	0.0	1201.8	11.0
112	340	WFP	0.448	0.457	0.087	0.20	0.20	0.20	0.24	0.3	0.0	0.0	-0.0	0.0	223.3	0.0	1147.0	11.0



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
111	103	5/16" NILSPI	4.662	4.765	0.986	1.05	1.10	0.00	0.24	14.4	0.0	0.0	-3.0	-106.5	230.9	0.0	1092.3	12.9
110	103	5/16" NILSPI	6.550	6.766	1.692	1.02	1.10	0.00	0.22	18.1	0.0	0.0	-4.5	-151.2	247.2	0.0	959.7	16.2
109	338	Wire Profile	0.067	0.070	0.020	0.48	0.50	0.48	0.22	0.1	0.0	0.0	-0.0	-0.5	256.0	0.0	881.7	16.2
108	103	5/16" NILSPI	0.092	0.095	0.027	1.01	1.10	0.00	0.22	0.2	0.0	0.0	-0.1	-2.1	256.2	0.0	880.2	16.3
107	13	ind. term	0.005	0.005	0.001	1.44	1.50	1.44	0.22	0.0	0.0	0.0	-0.0	-2.4	256.4	0.0	879.0	16.3
106	300	Load Cage	0.288	0.300	0.084	1.25	1.30	0.86	0.22	1.0	0.0	0.0	-0.2	-60.0	256.4	0.0	876.6	16.3
105	32	AS 3t 5/8"	0.006	0.006	0.002	1.43	1.50	1.43	0.22	0.0	0.0	0.0	-0.0	-0.7	257.4	0.0	816.4	17.5
104	53	PL 3t 3/4"	0.009	0.010	0.003	1.43	1.50	1.43	0.22	0.0	0.0	0.0	-0.0	-0.7	257.4	0.0	815.7	17.5
103	32	AS 3t 5/8"	0.006	0.006	0.002	1.43	1.50	1.43	0.22	0.0	0.0	0.0	-0.0	-0.7	257.5	0.0	814.9	17.5
102	181	1/2" MR	0.095	0.100	0.030	1.52	1.60	0.95	0.22	0.4	0.0	0.0	-0.1	-15.2	257.6	0.0	808.2	17.8
101	32	AS 3t 5/8"	0.006	0.006	0.002	1.43	1.50	1.43	0.22	0.0	0.0	0.0	-0.0	-0.7	257.9	0.0	799.0	17.9
100	53	PL 3t 3/4"	0.009	0.010	0.003	1.43	1.50	1.43	0.22	0.0	0.0	0.0	-0.0	-0.7	257.9	0.0	798.3	17.9
99	32	AS 3t 5/8"	0.006	0.006	0.002	1.43	1.50	1.43	0.22	0.0	0.0	0.0	-0.0	-0.7	257.9	0.0	797.6	17.9
98	274	HR17-4 seria	0.951	1.000	0.308	0.57	0.60	1.01	0.22	1.5	0.0	0.0	-0.4	88.0	258.0	0.0	796.9	17.9
97	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.22	0.0	0.0	0.0	-0.0	-0.7	259.4	0.0	884.5	16.3
96	53	PL 3t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.22	0.0	0.0	0.0	-0.0	-0.7	259.5	0.0	883.8	16.4
95	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.22	0.0	0.0	0.0	-0.0	-0.7	259.5	0.0	883.1	16.4
94	274	HR17-4 seria	0.959	1.000	0.282	0.58	0.60	1.02	0.22	1.5	0.0	0.0	-0.4	88.0	259.5	0.0	882.4	16.4
93	32	AS 3t 5/8"	0.006	0.006	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	261.1	0.0	970.1	15.1
92	53	PL 3t 3/4"	0.009	0.010	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	261.1	0.0	969.4	15.1
91	32	AS 3t 5/8"	0.006	0.006	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	261.1	0.0	968.6	15.1
90	103	5/16" NILSPI	0.276	0.286	0.075	1.02	1.10	0.00	0.22	0.7	0.0	0.0	-0.2	-6.4	261.5	0.0	964.8	15.2
89	491	Parachute	1.500	1.500	1.500	0.50	0.50	1.33	0.22	1.9	0.0	0.0	0.0	0.0	261.9	0.0	961.4	15.2
88	32	AS 3t 5/8"	0.006	0.006	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	263.8	0.0	961.4	15.3
87	53	PL 3t 3/4"	0.009	0.010	0.003	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	263.8	0.0	960.7	15.4
86	32	AS 3t 5/8"	0.006	0.006	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	263.9	0.0	960.0	15.4
85	103	5/16" NILSPI	0.092	0.095	0.025	1.01	1.10	0.00	0.22	0.2	0.0	0.0	-0.1	-2.1	264.0	0.0	958.3	15.4
84	491	Parachute	1.500	1.500	1.500	0.50	0.50	1.33	0.22	1.9	0.0	0.0	0.0	0.0	264.1	0.0	957.1	15.4
83	32	AS 3t 5/8"	0.006	0.006	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	266.1	0.0	957.1	15.5





**Global Southern Ocean HYPM Mooring Model Analysis**  
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<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
82	53	PL 3t 3/4"	0.009	0.010	0.003	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	266.1	0.0	956.5	15.5
81	32	AS 3t 5/8"	0.006	0.006	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	266.1	0.0	955.7	15.6
80	181	1/2" MR	0.096	0.100	0.027	1.54	1.60	0.96	0.22	0.4	0.0	0.0	-0.1	-15.2	266.3	0.0	948.9	15.8
78	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.22	0.0	0.0	0.0	-0.0	-0.7	266.5	0.0	939.7	15.8
77	53	PL 3t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.22	0.0	0.0	0.0	-0.0	-0.7	266.6	0.0	939.1	15.8
76	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.22	0.0	0.0	0.0	-0.0	-0.7	266.6	0.0	938.3	15.9
75	274	HR17-4 seria	0.962	1.000	0.274	0.58	0.60	1.02	0.22	1.5	0.0	0.0	-0.4	88.0	266.6	0.0	937.7	15.9
74	32	AS 3t 5/8"	0.006	0.006	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	268.1	0.0	1025.3	14.7
73	53	PL 3t 3/4"	0.009	0.010	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	268.2	0.0	1024.6	14.7
72	32	AS 3t 5/8"	0.006	0.006	0.002	1.45	1.50	1.45	0.22	0.0	0.0	0.0	-0.0	-0.7	268.2	0.0	1023.9	14.7
71	274	HR17-4 seria	0.967	1.000	0.254	0.58	0.60	1.03	0.22	1.5	0.0	0.0	-0.3	88.0	268.2	0.0	1023.2	14.7
70	32	AS 3t 5/8"	0.006	0.006	0.002	1.46	1.50	1.46	0.22	0.0	0.0	0.0	-0.0	-0.7	269.7	0.0	1110.9	13.6
69	53	PL 3t 3/4"	0.009	0.010	0.002	1.46	1.50	1.46	0.22	0.0	0.0	0.0	-0.0	-0.7	269.8	0.0	1110.2	13.7
68	32	AS 3t 5/8"	0.006	0.006	0.002	1.46	1.50	1.46	0.22	0.0	0.0	0.0	-0.0	-0.7	269.8	0.0	1109.5	13.7
67	274	HR17-4 seria	0.972	1.000	0.236	0.58	0.60	1.03	0.22	1.5	0.0	0.0	-0.3	88.0	269.8	0.0	1108.8	13.7
66	32	AS 3t 5/8"	0.006	0.006	0.001	1.46	1.50	1.46	0.22	0.0	0.0	0.0	-0.0	-0.7	271.4	0.0	1196.5	12.8
65	53	PL 3t 3/4"	0.009	0.010	0.002	1.46	1.50	1.46	0.22	0.0	0.0	0.0	-0.0	-0.7	271.4	0.0	1195.8	12.8
64	32	AS 3t 5/8"	0.006	0.006	0.001	1.46	1.50	1.46	0.22	0.0	0.0	0.0	-0.0	-0.7	271.4	0.0	1195.1	12.8
63	274	HR17-4 seria	0.975	1.000	0.222	0.59	0.60	1.03	0.22	1.5	0.0	0.0	-0.3	88.0	271.5	0.0	1194.4	12.8
62	32	AS 3t 5/8"	0.006	0.006	0.001	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	273.0	0.0	1282.1	12.0
61	53	PL 3t 3/4"	0.009	0.010	0.002	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	273.0	0.0	1281.4	12.0
60	32	AS 3t 5/8"	0.006	0.006	0.001	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	273.0	0.0	1280.7	12.0
59	274	HR17-4 seria	0.978	1.000	0.209	0.59	0.60	1.04	0.22	1.5	0.0	0.0	-0.3	88.0	273.1	0.0	1280.0	12.0
58	32	AS 3t 5/8"	0.006	0.006	0.001	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	274.6	0.0	1367.8	11.4
57	53	PL 3t 3/4"	0.009	0.010	0.002	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	274.6	0.0	1367.1	11.4
56	32	AS 3t 5/8"	0.006	0.006	0.001	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	274.7	0.0	1366.3	11.4
55	274	HR17-4 seria	0.980	1.000	0.197	0.59	0.60	1.04	0.22	1.5	0.0	0.0	-0.3	88.0	274.7	0.0	1365.7	11.4
54	32	AS 3t 5/8"	0.006	0.006	0.001	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	276.2	0.0	1453.4	10.8
53	53	PL 3t 3/4"	0.009	0.010	0.002	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	276.3	0.0	1452.7	10.8



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
52	32	AS 3t 5/8"	0.006	0.006	0.001	1.47	1.50	1.47	0.22	0.0	0.0	0.0	-0.0	-0.7	276.3	0.0	1452.0	10.8
51	274	HR17-4 seria	0.982	1.000	0.187	0.59	0.60	1.04	0.22	1.5	0.0	0.0	-0.3	88.0	276.3	0.0	1451.3	10.8
50	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	277.9	0.0	1539.1	10.2
49	53	PL 3t 3/4"	0.009	0.010	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	277.9	0.0	1538.4	10.2
48	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	277.9	0.0	1537.7	10.2
47	274	HR17-4 seria	0.984	1.000	0.178	0.59	0.60	1.04	0.22	1.5	0.0	0.0	-0.2	88.0	278.0	0.0	1537.0	10.3
46	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	279.5	0.0	1624.7	9.8
45	53	PL 3t 3/4"	0.009	0.010	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	279.5	0.0	1624.1	9.8
44	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	279.6	0.0	1623.3	9.8
43	274	HR17-4 seria	0.985	1.000	0.170	0.59	0.60	1.04	0.22	1.5	0.0	0.0	-0.2	88.0	279.6	0.0	1622.7	9.8
42	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	281.1	0.0	1710.4	9.3
41	53	PL 3t 3/4"	0.009	0.010	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	281.2	0.0	1709.8	9.3
40	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	281.2	0.0	1709.0	9.3
39	274	HR17-4 seria	0.987	1.000	0.162	0.59	0.60	1.05	0.22	1.5	0.0	0.0	-0.2	88.0	281.2	0.0	1708.4	9.3
38	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	282.8	0.0	1796.1	8.9
37	53	PL 3t 3/4"	0.009	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	282.8	0.0	1795.5	9.0
36	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	282.8	0.0	1794.7	9.0
35	274	HR17-4 seria	0.988	1.000	0.156	0.59	0.60	1.05	0.22	1.5	0.0	0.0	-0.2	88.0	282.9	0.0	1794.1	9.0
34	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	284.4	0.0	1881.8	8.6
33	53	PL 3t 3/4"	0.009	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	284.4	0.0	1881.2	8.6
32	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	284.5	0.0	1880.4	8.6
31	274	HR17-4 seria	0.989	1.000	0.150	0.59	0.60	1.05	0.22	1.5	0.0	0.0	-0.2	88.0	284.5	0.0	1879.8	8.6
30	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	286.0	0.0	1967.5	8.3
29	53	PL 3t 3/4"	0.010	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	286.1	0.0	1966.9	8.3
28	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	286.1	0.0	1966.1	8.3
27	181	1/2" MR	0.099	0.100	0.014	1.58	1.60	0.99	0.22	0.4	0.0	0.0	-0.1	-15.2	286.3	0.0	1959.4	8.3
26	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	286.5	0.0	1950.2	8.4
25	53	PL 3t 3/4"	0.009	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	286.6	0.0	1949.5	8.4
24	33	AS 5t 3/4"	0.009	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.1	286.6	0.0	1948.8	8.4



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #002 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
23	94	Swivel 5t	0.025	0.025	0.004	1.19	1.20	1.19	0.22	0.1	0.0	0.0	-0.0	-5.3	286.6	0.0	1947.7	8.4
22	33	AS 5t 3/4"	0.009	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.1	286.7	0.0	1942.4	8.4
21	53	PL 3t 3/4"	0.009	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	286.8	0.0	1941.3	8.4
20	33	AS 5t 3/4"	0.009	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.1	286.8	0.0	1940.6	8.4
19	478	Dual Release	0.285	0.288	0.042	1.19	1.20	0.89	0.22	0.9	0.0	0.0	-0.1	-61.0	286.8	0.0	1939.5	8.4
18	480	1/2" dropcha	0.024	0.024	0.004	1.58	1.60	0.99	0.22	0.1	0.0	0.0	-0.0	-6.8	287.7	0.0	1878.4	8.7
17	76	ML 17t 1-1/4	0.025	0.026	0.004	1.48	1.50	1.48	0.22	0.1	0.0	0.0	-0.0	-4.8	287.8	0.0	1871.5	8.7
16	34	AS 6t 7/8"	0.012	0.012	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.6	287.9	0.0	1866.7	8.8
15	53	PL 3t 3/4"	0.009	0.010	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	288.0	0.0	1865.1	8.8
14	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	288.0	0.0	1864.4	8.8
13	181	1/2" MR	0.099	0.100	0.015	1.58	1.60	0.99	0.22	0.4	0.0	0.0	-0.1	-15.2	288.2	0.0	1857.6	8.9
12	32	AS 3t 5/8"	0.006	0.006	0.001	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	288.4	0.0	1848.4	8.9
11	64	EL 6t 7/8"	0.012	0.012	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.0	288.5	0.0	1847.8	8.9
10	34	AS 6t 7/8"	0.012	0.012	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.6	288.5	0.0	1846.7	8.9
9	113	Nystron-1"	0.514	0.520	0.081	1.28	1.30	0.02	0.22	1.7	0.0	0.0	-0.3	-2.0	289.4	0.0	1844.1	8.9
8	34	AS 6t 7/8"	0.012	0.012	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.6	290.2	0.0	1843.0	8.9
7	64	EL 6t 7/8"	0.012	0.012	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.0	290.3	0.0	1841.4	9.0
6	34	AS 6t 7/8"	0.012	0.012	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.6	290.3	0.0	1840.4	9.0
5	183	3/4" MR	0.148	0.150	0.024	1.58	1.60	0.99	0.22	0.6	0.0	0.0	-0.1	-33.0	290.6	0.0	1825.5	9.1
4	33	AS 5t 3/4"	0.009	0.010	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.1	291.0	0.0	1805.7	9.2
3	53	PL 3t 3/4"	0.009	0.010	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-0.7	291.0	0.0	1804.6	9.2
2	34	AS 6t 7/8"	0.012	0.012	0.002	1.48	1.50	1.48	0.22	0.0	0.0	0.0	-0.0	-1.6	291.1	0.0	1803.8	9.2
1	522	double MACE	1.200	1.200	0.000	1.20	1.20	1.20	0.22	3.7	0.0	0.0	0.0	-2742.1	291.1	0.0	1802.3	0.0



### Global Southern Ocean HYPM Mooring Model Analysis designed for 4786m Depth

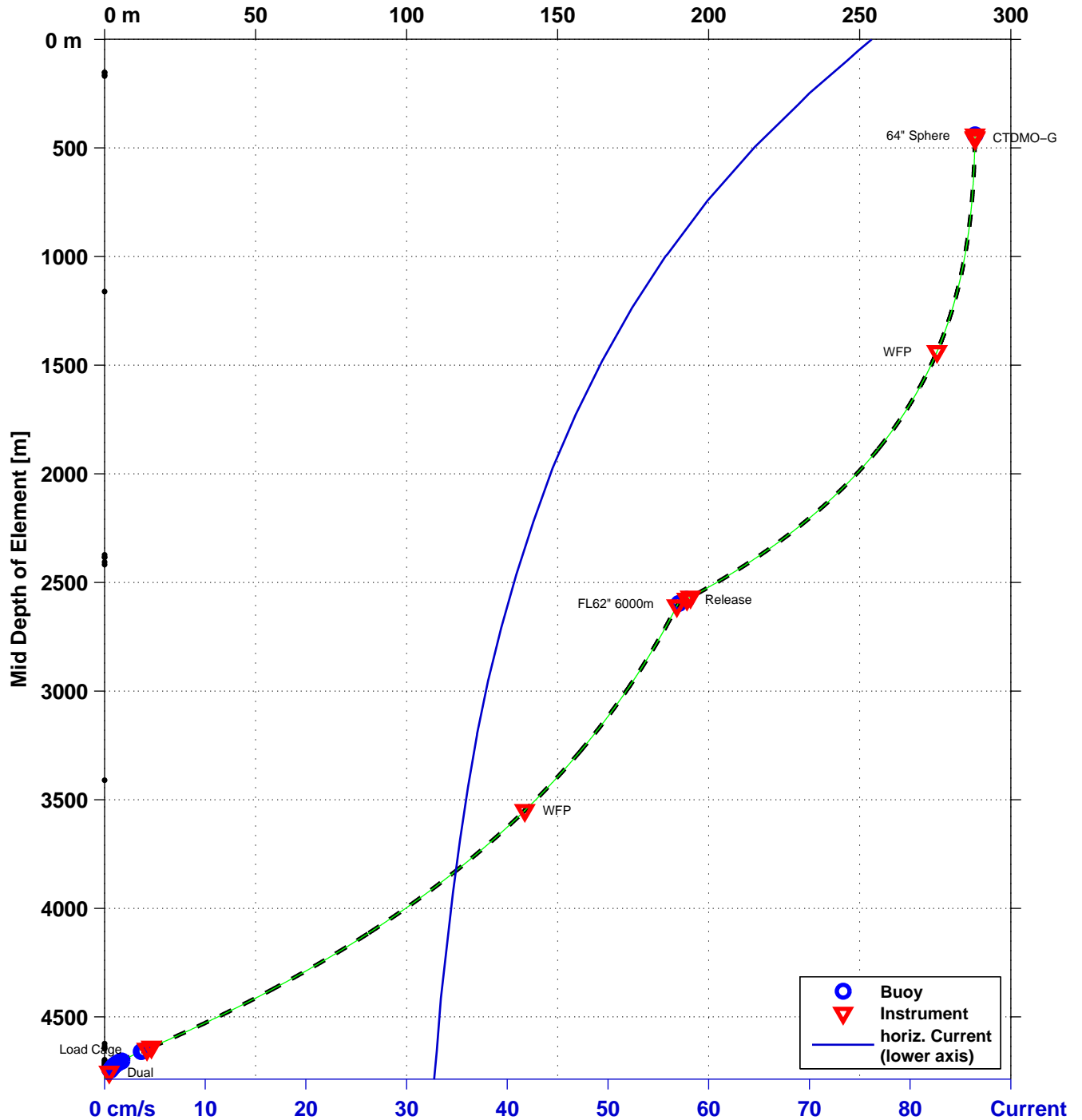


By: P. Chua	05-Aug-2014	DCN: 3201-00010	REV: B	REF.DES. GS02HYPM
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**Event #003 – Subduction [m]: max. 288m, Top at 440m**  
 Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf



Event #003: Vert / Horiz anchor load : 1709 kg / 555 kg  
 Vert / Horiz anchor safety : 125 % / 120 %,  
 Safe Wet MACE anchor weight : 2375 kg, (max. 500 kg or Horiz. safety)  
 Wet / Dry MACE anchor weight : 2742 kg / 3170 kg



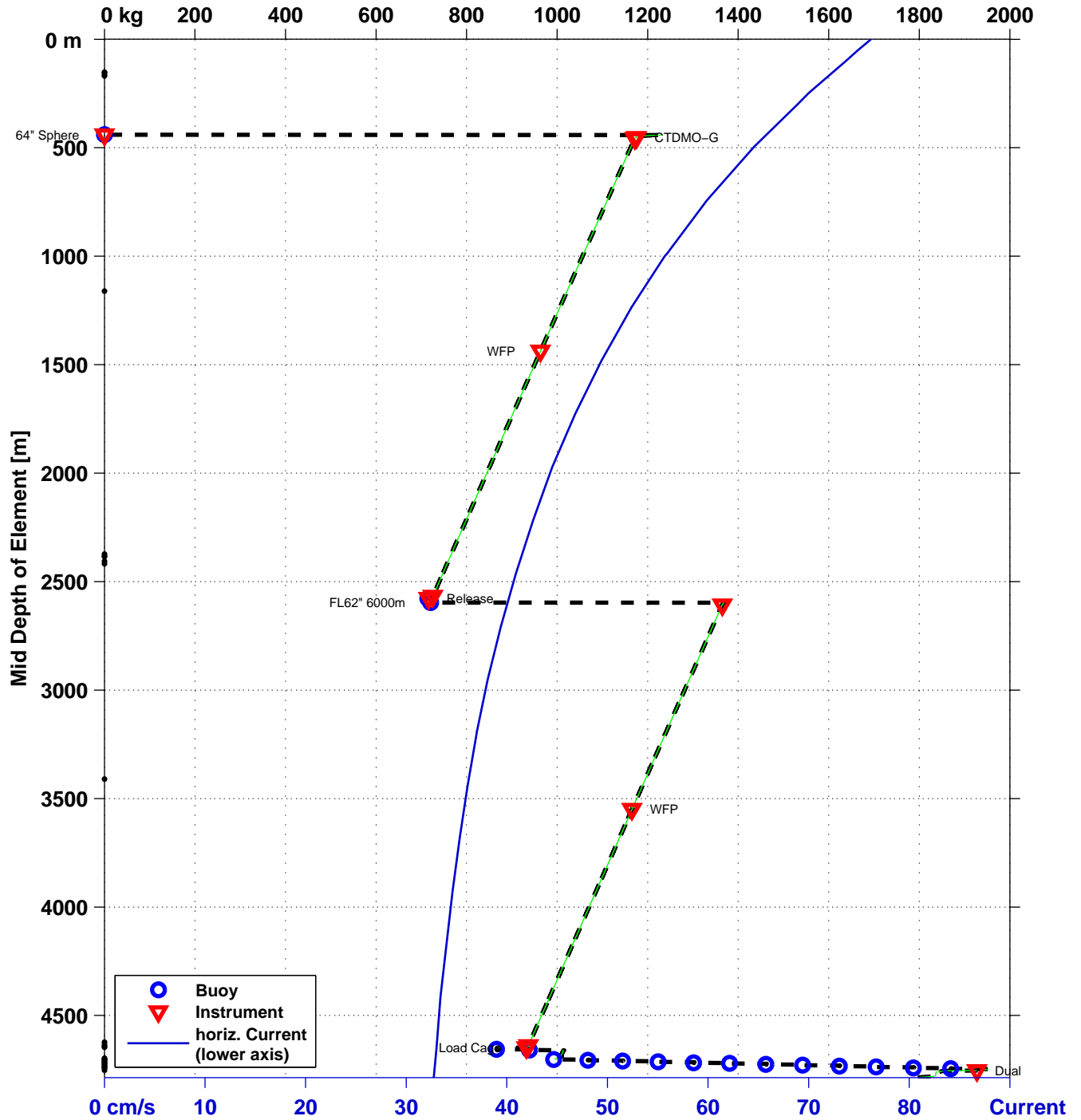
## Global Southern Ocean HYPM Mooring Model Analysis designed for 4786m Depth



By: P. Chua	05-Aug-2014	DCN: 3201-00010	REV: B	REF.DES. GS02HYPM
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Source: 05-Aug-2014 13:55:53, ...Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg  
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### Event #003 – Tension [kg] Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf



Event #003: Vert / Horiz anchor load : 1709 kg / 555 kg  
 Vert / Horiz anchor safety : 125 % / 120 %,  
 Safe Wet MACE anchor weight : 2375 kg, (max. 500 kg or Horiz. safety)  
 Wet / Dry MACE anchor weight : 2742 kg / 3170 kg



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Result**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]	
143	306	64" Sphere	1000m	2.3	1230.0	2.087	0.50	0.66	23.7	0.0	0.0	0.00	0.00	439.2	288.2	1504.0	1.1
142	17	U-Joint		0.3	-16.3	0.090	1.50	0.66	3.1	1230.2	7.7	0.00	0.00	441.6	288.2	1503.9	1.1
141	141	1/2" EM chain		5.0	-35.0	1.000	1.30	0.66	29.4	1213.9	12.1	0.00	0.00	442.3	288.2	1503.9	2.4
140	13	ind. term		0.1	-2.4	0.005	1.50	0.66	0.2	1179.0	7.4	0.00	0.00	446.8	288.2	1503.8	2.7
139	103	5/16" NILSPIN		5.0	-1.1	0.048	1.10	0.66	1.2	1176.6	25.3	0.01	0.26	447.4	288.2	1503.7	2.8
138	374	CTDMO-G P1000m		0.0	-2.8	0.042	1.40	0.66	1.3	1175.6	11.8	0.00	0.00	451.9	288.1	1503.5	2.8
137	103	5/16" NILSPIN		5.0	-1.1	0.048	1.10	0.66	1.2	1172.8	25.2	0.01	0.26	452.4	288.1	1503.5	2.9
136	339	Wire Profiler St		0.0	-0.5	0.070	0.50	0.65	0.8	1171.7	19.5	0.00	0.00	456.9	288.1	1503.3	2.9
135	103	5/16" NILSPIN		491.2	-104.4	4.670	1.10	0.61	98.1	1171.2	25.2	1.22	0.25	457.4	288.1	1503.3	8.6
134	103	5/16" NILSPIN		501.1	-106.5	4.765	1.10	0.53	73.1	1067.5	22.9	1.13	0.23	945.9	285.4	1453.6	13.9
133	340	WFP		0.0	0.0	0.457	0.20	0.50	1.2	963.4	9.6	0.00	0.00	1436.7	275.6	1355.8	13.9
132	103	5/16" NILSPIN		501.0	-106.5	4.765	1.10	0.47	54.1	963.4	20.7	1.01	0.20	1437.2	275.6	1355.8	19.5
131	103	5/16" NILSPIN		711.2	-151.2	6.766	1.10	0.42	53.8	862.1	18.5	1.25	0.18	1916.9	254.3	1211.8	28.0
130	338	Wire Profiler St		0.0	-0.5	0.070	0.50	0.40	0.3	725.5	12.1	0.00	0.00	2567.4	194.0	926.9	28.0
129	103	5/16" NILSPIN		10.0	-2.1	0.095	1.10	0.40	0.6	725.2	15.6	0.02	0.16	2567.9	194.0	926.9	28.2
128	13	ind. term		0.1	-2.4	0.005	1.50	0.40	0.1	723.3	4.5	0.00	0.00	2576.2	192.8	922.2	28.2
127	15	coupler ec		0.2	-6.0	0.020	1.50	0.40	0.2	721.2	4.5	0.00	0.00	2576.4	192.8	922.1	28.3
125	479	Release Float		1.0	0.0	0.592	1.20	0.40	5.2	716.0	7.2	0.00	0.00	2576.9	192.8	922.0	28.6
123	13	ind. term		0.1	-2.4	0.005	1.50	0.40	0.1	716.7	4.5	0.00	0.00	2577.4	192.7	921.6	29.0
122	256	CF14-1000		0.0	13.0	0.225	0.50	0.40	0.9	714.6	11.9	0.00	0.00	2577.4	192.7	921.5	29.1
120	103	5/16" NILSPIN		20.0	-4.3	0.191	1.10	0.40	1.2	726.1	15.6	0.03	0.16	2577.9	192.7	921.5	28.9
119	13	ind. term		0.1	-2.4	0.005	1.50	0.40	0.1	722.4	4.5	0.00	0.00	2595.0	190.2	911.9	28.9
118	225	FL62" 6000m		2.6	692.0	1.887	0.50	0.40	8.0	720.4	7.2	0.00	0.00	2596.4	190.2	911.8	29.0
117	13	ind. term		0.1	-2.4	0.005	1.50	0.40	0.1	1369.3	8.6	0.00	0.00	2597.4	189.9	910.5	15.1
116	103	5/16" NILSPIN		10.0	-2.1	0.095	1.10	0.40	0.8	1367.0	29.4	0.03	0.30	2598.0	189.8	910.5	15.2
115	339	Wire Profiler St		0.0	-0.5	0.070	0.50	0.40	0.3	1365.0	22.7	0.00	0.00	2607.1	189.5	907.9	15.2
114	103	5/16" NILSPIN		491.4	-104.4	4.670	1.10	0.39	35.6	1364.5	29.3	1.43	0.29	2607.6	189.5	907.9	18.2
113	103	5/16" NILSPIN		501.3	-106.5	4.765	1.10	0.37	30.7	1265.0	27.2	1.35	0.27	3078.3	168.7	766.7	21.4
112	340	WFP		0.0	0.0	0.457	0.20	0.36	0.6	1165.4	11.7	0.00	0.00	3549.6	139.1	597.3	21.4
111	103	5/16" NILSPIN		501.2	-106.5	4.765	1.10	0.35	26.2	1165.4	25.0	1.24	0.25	3550.1	139.1	597.3	25.0



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
110	103	5/16" NILSPIN	711.6	-151.2	6.766	1.10	0.34	30.3	1068.4	23.0	1.58	0.22	4010.7	98.6	399.9	31.0
109	338	Wire Profiler St	0.0	-0.5	0.070	0.50	0.33	0.2	936.5	15.6	0.00	0.00	4638.8	15.5	67.0	31.0
108	103	5/16" NILSPIN	10.0	-2.1	0.095	1.10	0.33	0.4	936.1	20.1	0.02	0.21	4639.3	15.5	67.0	31.1
107	13	ind. term	0.1	-2.4	0.005	1.50	0.33	0.0	934.3	5.8	0.00	0.00	4647.4	14.1	61.8	31.1
106	300	Load Cage	1.5	-60.0	0.300	1.30	0.33	1.9	932.3	9.3	0.00	0.00	4648.2	14.1	61.8	31.2
105	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	881.9	7.3	0.00	0.00	4648.7	13.9	61.0	33.3
104	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	881.4	7.3	0.00	0.00	4648.8	13.8	61.0	33.4
103	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	880.8	7.3	0.00	0.00	4648.9	13.8	60.9	33.4
102	181	1/2" MR	5.0	-15.2	0.100	1.60	0.33	0.6	880.2	8.8	0.00	0.00	4649.4	13.8	60.9	33.9
101	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	867.7	7.2	0.00	0.00	4653.1	13.0	58.1	34.0
100	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	867.1	7.2	0.00	0.00	4653.2	13.0	58.1	34.1
99	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	866.5	7.2	0.00	0.00	4653.2	12.9	58.0	34.1
98	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	2.7	866.0	8.7	0.00	0.00	4655.3	12.9	58.0	34.1
97	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	940.7	7.8	0.00	0.00	4656.6	12.2	55.7	31.3
96	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	940.1	7.8	0.00	0.00	4656.7	12.2	55.7	31.3
95	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	939.5	7.8	0.00	0.00	4656.8	12.2	55.6	31.3
94	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	2.9	939.0	9.4	0.00	0.00	4658.8	12.2	55.6	31.4
93	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1015.6	8.5	0.00	0.00	4660.2	11.6	53.5	28.9
92	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1015.0	8.5	0.00	0.00	4660.3	11.6	53.5	29.0
91	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1014.4	8.5	0.00	0.00	4660.4	11.6	53.4	29.0
90	103	5/16" NILSPIN	30.1	-6.4	0.286	1.10	0.33	1.2	1013.8	21.8	0.07	0.22	4660.9	11.6	53.4	29.3
89	491	Parachute	0.0	0.0	1.500	0.50	0.33	4.4	1008.3	10.1	0.00	0.00	4686.7	7.8	38.7	29.3
88	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1010.5	8.4	0.00	0.00	4686.7	7.8	38.7	29.5
87	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1009.9	8.4	0.00	0.00	4686.8	7.8	38.7	29.5
86	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1009.3	8.4	0.00	0.00	4686.9	7.8	38.7	29.5
85	103	5/16" NILSPIN	10.0	-2.1	0.095	1.10	0.33	0.4	1008.7	21.7	0.02	0.22	4687.4	7.8	38.6	29.6
84	491	Parachute	0.0	0.0	1.500	0.50	0.33	4.3	1006.9	10.1	0.00	0.00	4695.6	6.5	33.7	29.6
83	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1009.0	8.4	0.00	0.00	4695.6	6.5	33.7	29.8
82	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1008.5	8.4	0.00	0.00	4695.7	6.4	33.6	29.9
81	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1007.9	8.4	0.00	0.00	4695.8	6.4	33.6	29.9



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
80	181	1/2" MR	5.0	-15.2	0.100	1.60	0.33	0.7	1007.3	10.1	0.00	0.00	4696.3	6.4	33.6	30.3
78	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	994.2	8.3	0.00	0.00	4700.2	5.7	31.0	30.4
77	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	993.6	8.3	0.00	0.00	4700.3	5.7	31.0	30.4
76	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	993.0	8.3	0.00	0.00	4700.3	5.7	31.0	30.4
75	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	2.9	992.5	9.9	0.00	0.00	4702.4	5.7	30.9	30.5
74	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1069.7	8.9	0.00	0.00	4703.8	5.2	28.9	28.2
73	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1069.1	8.9	0.00	0.00	4703.9	5.2	28.9	28.3
72	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1068.5	8.9	0.00	0.00	4704.0	5.1	28.8	28.3
71	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.0	1067.9	10.7	0.00	0.00	4706.0	5.1	28.8	28.3
70	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1146.5	9.6	0.00	0.00	4707.6	4.7	26.9	26.4
69	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1146.0	9.5	0.00	0.00	4707.7	4.6	26.9	26.4
68	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1145.3	9.5	0.00	0.00	4707.7	4.6	26.8	26.4
67	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.1	1144.7	11.4	0.00	0.00	4709.8	4.6	26.8	26.4
66	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1224.5	10.2	0.00	0.00	4711.4	4.2	25.0	24.7
65	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1223.9	10.2	0.00	0.00	4711.5	4.2	25.0	24.8
64	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1223.2	10.2	0.00	0.00	4711.5	4.2	24.9	24.8
63	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.1	1222.7	12.2	0.00	0.00	4713.6	4.2	24.9	24.8
62	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1303.4	10.9	0.00	0.00	4715.2	3.8	23.2	23.3
61	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1302.8	10.9	0.00	0.00	4715.3	3.8	23.2	23.3
60	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1302.1	10.9	0.00	0.00	4715.4	3.8	23.1	23.3
59	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.2	1301.5	13.0	0.00	0.00	4717.4	3.8	23.1	23.4
58	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1383.0	11.5	0.00	0.00	4719.1	3.5	21.5	22.1
57	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1382.4	11.5	0.00	0.00	4719.2	3.5	21.5	22.1
56	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1381.7	11.5	0.00	0.00	4719.3	3.5	21.5	22.1
55	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.2	1381.1	13.8	0.00	0.00	4721.3	3.5	21.4	22.1
54	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1463.3	12.2	0.00	0.00	4723.1	3.2	19.9	20.9
53	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1462.7	12.2	0.00	0.00	4723.1	3.2	19.9	20.9
52	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1462.0	12.2	0.00	0.00	4723.2	3.1	19.9	21.0
51	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.2	1461.4	14.6	0.00	0.00	4725.3	3.1	19.8	21.0
50	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1544.1	12.9	0.00	0.00	4727.0	2.9	18.4	19.9





**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
49	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1543.5	12.9	0.00	0.00	4727.1	2.9	18.4	19.9
48	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1542.8	12.9	0.00	0.00	4727.2	2.9	18.4	19.9
47	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.3	1542.2	15.4	0.00	0.00	4729.2	2.9	18.3	20.0
46	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1625.4	13.5	0.00	0.00	4731.0	2.6	17.0	19.0
45	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1624.8	13.5	0.00	0.00	4731.1	2.6	16.9	19.0
44	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1624.1	13.5	0.00	0.00	4731.2	2.6	16.9	19.0
43	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.3	1623.4	16.2	0.00	0.00	4733.2	2.6	16.9	19.0
42	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1707.0	14.2	0.00	0.00	4735.0	2.4	15.6	18.2
41	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1706.4	14.2	0.00	0.00	4735.1	2.4	15.6	18.2
40	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1705.7	14.2	0.00	0.00	4735.2	2.4	15.5	18.2
39	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.3	1705.1	17.1	0.00	0.00	4737.2	2.4	15.5	18.2
38	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1789.1	14.9	0.00	0.00	4739.1	2.2	14.3	17.5
37	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1788.4	14.9	0.00	0.00	4739.1	2.2	14.2	17.5
36	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1787.7	14.9	0.00	0.00	4739.2	2.2	14.2	17.5
35	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.3	1787.1	17.9	0.00	0.00	4741.3	2.2	14.2	17.5
34	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1871.4	15.6	0.00	0.00	4743.1	2.0	13.0	16.8
33	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1870.8	15.6	0.00	0.00	4743.2	2.0	13.0	16.8
32	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1870.1	15.6	0.00	0.00	4743.3	2.0	12.9	16.8
31	274	HR17-4 serial	4.0	88.0	1.000	0.60	0.33	3.4	1869.4	18.7	0.00	0.00	4745.3	2.0	12.9	16.8
30	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1954.0	16.3	0.00	0.00	4747.2	1.8	11.8	16.2
29	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1953.4	16.3	0.00	0.00	4747.2	1.8	11.7	16.2
28	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1952.7	16.3	0.00	0.00	4747.3	1.8	11.7	16.2
27	181	1/2" MR	5.0	-15.2	0.100	1.60	0.33	0.8	1952.0	19.5	0.00	0.00	4747.9	1.8	11.7	16.3
26	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1937.4	16.1	0.00	0.00	4752.2	1.6	10.3	16.3
25	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1936.8	16.1	0.00	0.00	4752.3	1.6	10.3	16.3
24	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.33	0.1	1936.1	10.8	0.00	0.00	4752.4	1.6	10.2	16.3
23	94	Swivel 5t	0.2	-5.3	0.025	1.20	0.33	0.2	1935.1	19.4	0.00	0.00	4752.5	1.6	10.2	16.4
22	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.33	0.1	1930.0	10.7	0.00	0.00	4752.7	1.6	10.2	16.4
21	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1928.9	16.1	0.00	0.00	4752.8	1.6	10.1	16.4
20	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.33	0.1	1928.2	10.7	0.00	0.00	4752.8	1.6	10.1	16.4



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Result, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Mooring Element	Length [m]	Buoy [kg]	Area [m^2]	Cd	Current [m/s]	Drag [kg]	Tension [kg]	[%]	Stretch [m]	[%]	Depth [m]	dZ [m]	dXY [m]	Tilt [deg]
19	478	Dual Release	1.0	-61.0	0.288	1.20	0.33	2.0	1927.2	19.3	0.00	0.00	4753.4	1.6	10.1	16.4
18	480	1/2" dropchain	0.6	-6.8	0.024	1.60	0.33	0.2	1868.9	11.7	0.00	0.00	4754.2	1.5	9.8	17.0
17	76	ML 17t 1-1/4"	0.2	-4.8	0.026	1.50	0.33	0.2	1862.4	4.2	0.00	0.00	4754.6	1.5	9.6	17.1
16	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.33	0.1	1857.8	7.7	0.00	0.00	4754.7	1.5	9.5	17.1
15	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1856.3	15.5	0.00	0.00	4754.8	1.5	9.5	17.2
14	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1855.6	15.5	0.00	0.00	4754.9	1.5	9.5	17.2
13	181	1/2" MR	5.0	-15.2	0.100	1.60	0.33	0.8	1855.0	18.5	0.00	0.00	4755.4	1.5	9.5	17.3
12	32	AS 3t 5/8"	0.1	-0.7	0.006	1.50	0.33	0.1	1840.5	15.3	0.00	0.00	4759.8	1.2	8.0	17.4
11	64	EL 6t 7/8"	0.1	-1.0	0.012	1.50	0.33	0.1	1839.8	7.7	0.00	0.00	4759.8	1.2	8.0	17.4
10	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.33	0.1	1838.9	7.7	0.00	0.00	4759.9	1.2	7.9	17.4
9	113	Nystron-1"	20.7	-2.0	0.520	1.30	0.33	3.5	1837.4	10.9	0.66	3.28	4760.5	1.2	7.9	17.5
8	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.33	0.1	1835.6	7.6	0.00	0.00	4779.7	0.3	1.7	17.5
7	64	EL 6t 7/8"	0.1	-1.0	0.012	1.50	0.33	0.1	1834.1	7.6	0.00	0.00	4779.8	0.3	1.7	17.5
6	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.33	0.1	1833.1	7.6	0.00	0.00	4779.9	0.3	1.6	17.6
5	183	3/4" MR	5.0	-33.1	0.150	1.60	0.33	1.2	1831.7	7.6	0.00	0.00	4780.5	0.3	1.6	17.9
4	33	AS 5t 3/4"	0.1	-1.1	0.010	1.50	0.33	0.1	1800.2	10.0	0.00	0.00	4784.8	0.0	0.1	17.9
3	53	PL 3t 3/4"	0.1	-0.7	0.010	1.50	0.33	0.1	1799.2	15.0	0.00	0.00	4784.9	0.0	0.1	17.9
2	34	AS 6t 7/8"	0.1	-1.6	0.012	1.50	0.33	0.1	1798.5	7.5	0.00	0.00	4785.0	0.0	0.0	18.0
1	522	double MACE Anch	1.0	-2742.1	1.200	1.20	0.33	8.3	1797.0	30.0	0.00	0.00	4786.0	0.0	0.0	0.0

Max. 30.0% Static Tension at:

1	522	double MACE Anch	1.0	-2742.1	1.200	1.20	0.33	8.3	1797.0	30.0	0.00	0.00	4786.0	0.0	0.0	0.0
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Vert/Horiz Anchor Load : 1709 kg / 555 kg

Wet MACE Anchor Weight : 2742 kg

Safe MACE Anchor Weight : 2375 kg



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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**Source:** 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg  
**Author:** 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Parameter**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m^2	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
143	306	64" Sphere 1	2.087	2.087	2.087	0.50	0.50	0.50	0.66	23.7	0.0	0.0	0.0	1230.0	0.0	0.0	0.0	1.1
142	17	U-Joint	0.090	0.090	0.002	1.50	1.50	1.50	0.66	3.1	0.0	0.0	-0.1	-16.3	23.7	0.0	1230.0	1.1
141	141	1/2" EM chai	0.999	1.000	0.032	1.30	1.30	1.00	0.66	29.4	0.0	0.0	-0.9	-35.0	38.5	0.0	1199.3	2.4
140	13	ind. term	0.005	0.005	0.000	1.50	1.50	1.50	0.66	0.2	0.0	0.0	-0.0	-2.4	56.2	0.0	1177.7	2.7
139	103	5/16" NILSPI	0.048	0.048	0.002	1.10	1.10	0.00	0.66	1.2	0.0	0.0	-0.1	-1.1	56.8	0.0	1174.8	2.8
138	374	CTDMO-G P100	0.042	0.042	0.002	1.40	1.40	1.00	0.66	1.3	0.0	0.0	-0.1	-2.8	57.5	0.0	1174.2	2.8
137	103	5/16" NILSPI	0.048	0.048	0.002	1.10	1.10	0.00	0.66	1.2	0.0	0.0	-0.1	-1.1	59.3	0.0	1170.9	2.9
136	339	Wire Profile	0.070	0.070	0.004	0.50	0.50	0.50	0.65	0.8	0.0	0.0	-0.0	-0.5	60.0	0.0	1170.2	2.9
135	103	5/16" NILSPI	4.644	4.670	0.472	1.09	1.10	0.00	0.61	98.1	0.0	0.0	-9.7	-104.4	112.4	0.0	1113.3	8.6
134	103	5/16" NILSPI	4.672	4.765	0.930	1.05	1.10	0.00	0.53	73.1	0.0	0.0	-14.1	-106.5	197.3	0.0	995.6	13.9
133	340	WFP	0.443	0.457	0.110	0.19	0.20	0.19	0.50	1.2	0.0	0.0	-0.3	0.0	232.0	0.0	935.0	13.9
132	103	5/16" NILSPI	4.562	4.765	1.370	1.00	1.10	0.00	0.47	54.1	0.0	0.0	-15.4	-106.5	261.6	0.0	873.9	19.5
131	103	5/16" NILSPI	6.193	6.766	2.710	0.91	1.10	0.00	0.42	53.8	0.0	0.0	-21.3	-151.2	316.1	0.0	726.5	28.0
130	338	Wire Profile	0.062	0.070	0.033	0.44	0.50	0.44	0.40	0.3	0.0	0.0	-0.1	-0.5	341.1	0.0	640.3	28.0
129	103	5/16" NILSPI	0.084	0.095	0.045	0.83	1.10	0.00	0.40	0.6	0.0	0.0	-0.3	-2.1	341.8	0.0	638.7	28.2
128	13	ind. term	0.004	0.005	0.002	1.32	1.50	1.32	0.40	0.1	0.0	0.0	-0.0	-2.4	342.1	0.0	637.3	28.2
127	15	coupler ec	0.018	0.020	0.009	1.32	1.50	1.32	0.40	0.2	0.0	0.0	-0.1	-6.0	342.1	0.0	634.9	28.3
125	479	Release Floa	0.520	0.592	0.283	1.05	1.20	0.79	0.40	5.2	0.0	0.0	-2.1	0.0	342.4	0.0	628.8	28.6
123	13	ind. term	0.004	0.005	0.002	1.31	1.50	1.31	0.40	0.1	0.0	0.0	-0.0	-2.4	347.5	0.0	626.8	29.0
122	256	CF14-1000	0.197	0.225	0.109	0.44	0.50	0.35	0.40	0.9	0.0	0.0	-0.3	13.0	347.6	0.0	624.3	29.1
120	103	5/16" NILSPI	0.167	0.191	0.092	0.82	1.10	0.00	0.40	1.2	0.0	0.0	-0.6	-4.3	349.0	0.0	634.7	28.9
119	13	ind. term	0.004	0.005	0.002	1.31	1.50	1.31	0.40	0.1	0.0	0.0	-0.0	-2.4	349.6	0.0	632.2	28.9
118	225	FL62" 6000m	1.887	1.887	1.887	0.50	0.50	0.50	0.40	8.0	0.0	0.0	0.0	692.0	349.7	0.0	629.8	29.0
117	13	ind. term	0.005	0.005	0.001	1.45	1.50	1.45	0.40	0.1	0.0	0.0	-0.0	-2.4	357.7	0.0	1321.8	15.1
116	103	5/16" NILSPI	0.092	0.095	0.025	1.02	1.10	0.00	0.40	0.8	0.0	0.0	-0.2	-2.1	358.2	0.0	1318.3	15.2
115	339	Wire Profile	0.068	0.070	0.018	0.48	0.50	0.48	0.40	0.3	0.0	0.0	-0.1	-0.5	358.6	0.0	1317.0	15.2
114	103	5/16" NILSPI	4.472	4.670	1.341	1.00	1.10	0.00	0.39	35.6	0.0	0.0	-10.2	-104.4	377.2	0.0	1259.3	18.2
113	103	5/16" NILSPI	4.484	4.765	1.610	0.96	1.10	0.00	0.37	30.7	0.0	0.0	-10.4	-106.5	410.2	0.0	1143.6	21.4
112	340	WFP	0.425	0.457	0.167	0.19	0.20	0.19	0.36	0.6	0.0	0.0	-0.2	0.0	425.2	0.0	1085.1	21.4



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
111	103	5/16" NILSPI	4.379	4.765	1.876	0.91	1.10	0.00	0.35	26.2	0.0	0.0	-10.3	-106.5	439.2	0.0	1026.6	25.0
110	103	5/16" NILSPI	5.976	6.766	3.166	0.84	1.10	0.00	0.34	30.3	0.0	0.0	-14.1	-151.2	467.8	0.0	885.5	31.0
109	338	Wire Profile	0.060	0.070	0.036	0.43	0.50	0.43	0.33	0.2	0.0	0.0	-0.0	-0.5	482.3	0.0	802.7	31.0
108	103	5/16" NILSPI	0.082	0.095	0.049	0.78	1.10	0.00	0.33	0.4	0.0	0.0	-0.2	-2.1	482.7	0.0	801.2	31.1
107	13	ind. term	0.004	0.005	0.003	1.28	1.50	1.28	0.33	0.0	0.0	0.0	-0.0	-2.4	482.9	0.0	799.9	31.1
106	300	Load Cage	0.257	0.300	0.155	1.11	1.30	0.77	0.33	1.9	0.0	0.0	-0.8	-60.0	482.9	0.0	797.5	31.2
105	32	AS 3t 5/8"	0.005	0.006	0.004	1.25	1.50	1.25	0.33	0.1	0.0	0.0	-0.0	-0.7	484.8	0.0	736.7	33.3
104	53	PL 3t 3/4"	0.008	0.010	0.005	1.25	1.50	1.25	0.33	0.1	0.0	0.0	-0.0	-0.7	484.9	0.0	736.0	33.4
103	32	AS 3t 5/8"	0.005	0.006	0.004	1.25	1.50	1.25	0.33	0.1	0.0	0.0	-0.0	-0.7	485.0	0.0	735.2	33.4
102	181	1/2" MR	0.083	0.100	0.055	1.33	1.60	0.83	0.33	0.6	0.0	0.0	-0.4	-15.2	485.3	0.0	728.4	33.9
101	32	AS 3t 5/8"	0.005	0.006	0.004	1.24	1.50	1.24	0.33	0.1	0.0	0.0	-0.0	-0.7	485.7	0.0	719.0	34.0
100	53	PL 3t 3/4"	0.008	0.010	0.005	1.24	1.50	1.24	0.33	0.1	0.0	0.0	-0.0	-0.7	485.7	0.0	718.3	34.1
99	32	AS 3t 5/8"	0.005	0.006	0.004	1.24	1.50	1.24	0.33	0.1	0.0	0.0	-0.0	-0.7	485.8	0.0	717.6	34.1
98	274	HR17-4 seria	0.828	1.000	0.561	0.50	0.60	0.88	0.33	2.7	0.0	0.0	-1.0	88.0	485.8	0.0	716.9	34.1
97	32	AS 3t 5/8"	0.005	0.006	0.003	1.28	1.50	1.28	0.33	0.1	0.0	0.0	-0.0	-0.7	488.5	0.0	803.9	31.3
96	53	PL 3t 3/4"	0.008	0.010	0.005	1.28	1.50	1.28	0.33	0.1	0.0	0.0	-0.0	-0.7	488.6	0.0	803.2	31.3
95	32	AS 3t 5/8"	0.005	0.006	0.003	1.28	1.50	1.28	0.33	0.1	0.0	0.0	-0.0	-0.7	488.7	0.0	802.4	31.3
94	274	HR17-4 seria	0.854	1.000	0.520	0.51	0.60	0.91	0.33	2.9	0.0	0.0	-1.0	88.0	488.7	0.0	801.8	31.4
93	32	AS 3t 5/8"	0.006	0.006	0.003	1.31	1.50	1.31	0.33	0.1	0.0	0.0	-0.0	-0.7	491.6	0.0	888.7	28.9
92	53	PL 3t 3/4"	0.008	0.010	0.005	1.31	1.50	1.31	0.33	0.1	0.0	0.0	-0.0	-0.7	491.6	0.0	888.0	29.0
91	32	AS 3t 5/8"	0.006	0.006	0.003	1.31	1.50	1.31	0.33	0.1	0.0	0.0	-0.0	-0.7	491.7	0.0	887.3	29.0
90	103	5/16" NILSPI	0.250	0.286	0.139	0.82	1.10	0.00	0.33	1.2	0.0	0.0	-0.6	-6.4	492.3	0.0	883.2	29.3
89	491	Parachute	1.500	1.500	1.500	0.50	0.50	1.33	0.33	4.4	0.0	0.0	0.0	0.0	492.9	0.0	879.6	29.3
88	32	AS 3t 5/8"	0.006	0.006	0.003	1.31	1.50	1.31	0.33	0.1	0.0	0.0	-0.0	-0.7	497.3	0.0	879.6	29.5
87	53	PL 3t 3/4"	0.008	0.010	0.005	1.31	1.50	1.31	0.33	0.1	0.0	0.0	-0.0	-0.7	497.3	0.0	878.9	29.5
86	32	AS 3t 5/8"	0.006	0.006	0.003	1.31	1.50	1.31	0.33	0.1	0.0	0.0	-0.0	-0.7	497.4	0.0	878.2	29.5
85	103	5/16" NILSPI	0.083	0.095	0.047	0.81	1.10	0.00	0.33	0.4	0.0	0.0	-0.2	-2.1	497.6	0.0	876.5	29.6
84	491	Parachute	1.500	1.500	1.500	0.50	0.50	1.33	0.33	4.3	0.0	0.0	0.0	0.0	497.9	0.0	875.2	29.6
83	32	AS 3t 5/8"	0.006	0.006	0.003	1.30	1.50	1.30	0.33	0.1	0.0	0.0	-0.0	-0.7	502.2	0.0	875.2	29.8



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
82	53	PL 3t 3/4"	0.008	0.010	0.005	1.30	1.50	1.30	0.33	0.1	0.0	0.0	-0.0	-0.7	502.3	0.0	874.5	29.9
81	32	AS 3t 5/8"	0.006	0.006	0.003	1.30	1.50	1.30	0.33	0.1	0.0	0.0	-0.0	-0.7	502.3	0.0	873.7	29.9
80	181	1/2" MR	0.087	0.100	0.050	1.38	1.60	0.87	0.33	0.7	0.0	0.0	-0.3	-15.2	502.7	0.0	866.8	30.3
78	32	AS 3t 5/8"	0.006	0.006	0.003	1.29	1.50	1.29	0.33	0.1	0.0	0.0	-0.0	-0.7	503.1	0.0	857.5	30.4
77	53	PL 3t 3/4"	0.008	0.010	0.005	1.29	1.50	1.29	0.33	0.1	0.0	0.0	-0.0	-0.7	503.1	0.0	856.8	30.4
76	32	AS 3t 5/8"	0.006	0.006	0.003	1.29	1.50	1.29	0.33	0.1	0.0	0.0	-0.0	-0.7	503.2	0.0	856.1	30.4
75	274	HR17-4 seria	0.862	1.000	0.507	0.52	0.60	0.91	0.33	2.9	0.0	0.0	-1.0	88.0	503.3	0.0	855.4	30.5
74	32	AS 3t 5/8"	0.006	0.006	0.003	1.32	1.50	1.32	0.33	0.1	0.0	0.0	-0.0	-0.7	506.1	0.0	942.4	28.2
73	53	PL 3t 3/4"	0.008	0.010	0.005	1.32	1.50	1.32	0.33	0.1	0.0	0.0	-0.0	-0.7	506.2	0.0	941.7	28.3
72	32	AS 3t 5/8"	0.006	0.006	0.003	1.32	1.50	1.32	0.33	0.1	0.0	0.0	-0.0	-0.7	506.3	0.0	940.9	28.3
71	274	HR17-4 seria	0.880	1.000	0.474	0.53	0.60	0.93	0.33	3.0	0.0	0.0	-1.0	88.0	506.3	0.0	940.2	28.3
70	32	AS 3t 5/8"	0.006	0.006	0.003	1.34	1.50	1.34	0.33	0.1	0.0	0.0	-0.0	-0.7	509.3	0.0	1027.2	26.4
69	53	PL 3t 3/4"	0.009	0.010	0.004	1.34	1.50	1.34	0.33	0.1	0.0	0.0	-0.0	-0.7	509.4	0.0	1026.5	26.4
68	32	AS 3t 5/8"	0.006	0.006	0.003	1.34	1.50	1.34	0.33	0.1	0.0	0.0	-0.0	-0.7	509.4	0.0	1025.8	26.4
67	274	HR17-4 seria	0.895	1.000	0.445	0.54	0.60	0.95	0.33	3.1	0.0	0.0	-1.0	88.0	509.5	0.0	1025.1	26.4
66	32	AS 3t 5/8"	0.006	0.006	0.003	1.36	1.50	1.36	0.33	0.1	0.0	0.0	-0.0	-0.7	512.5	0.0	1112.1	24.7
65	53	PL 3t 3/4"	0.009	0.010	0.004	1.36	1.50	1.36	0.33	0.1	0.0	0.0	-0.0	-0.7	512.6	0.0	1111.4	24.8
64	32	AS 3t 5/8"	0.006	0.006	0.003	1.36	1.50	1.36	0.33	0.1	0.0	0.0	-0.0	-0.7	512.7	0.0	1110.6	24.8
63	274	HR17-4 seria	0.908	1.000	0.419	0.54	0.60	0.96	0.33	3.1	0.0	0.0	-1.0	88.0	512.7	0.0	1109.9	24.8
62	32	AS 3t 5/8"	0.006	0.006	0.003	1.38	1.50	1.38	0.33	0.1	0.0	0.0	-0.0	-0.7	515.9	0.0	1196.9	23.3
61	53	PL 3t 3/4"	0.009	0.010	0.004	1.38	1.50	1.38	0.33	0.1	0.0	0.0	-0.0	-0.7	515.9	0.0	1196.3	23.3
60	32	AS 3t 5/8"	0.006	0.006	0.003	1.38	1.50	1.38	0.33	0.1	0.0	0.0	-0.0	-0.7	516.0	0.0	1195.5	23.3
59	274	HR17-4 seria	0.918	1.000	0.397	0.55	0.60	0.97	0.33	3.2	0.0	0.0	-1.0	88.0	516.0	0.0	1194.8	23.4
58	32	AS 3t 5/8"	0.006	0.006	0.002	1.39	1.50	1.39	0.33	0.1	0.0	0.0	-0.0	-0.7	519.2	0.0	1281.8	22.1
57	53	PL 3t 3/4"	0.009	0.010	0.004	1.39	1.50	1.39	0.33	0.1	0.0	0.0	-0.0	-0.7	519.3	0.0	1281.2	22.1
56	32	AS 3t 5/8"	0.006	0.006	0.002	1.39	1.50	1.39	0.33	0.1	0.0	0.0	-0.0	-0.7	519.4	0.0	1280.4	22.1
55	274	HR17-4 seria	0.927	1.000	0.376	0.56	0.60	0.98	0.33	3.2	0.0	0.0	-1.0	88.0	519.4	0.0	1279.7	22.1
54	32	AS 3t 5/8"	0.006	0.006	0.002	1.40	1.50	1.40	0.33	0.1	0.0	0.0	-0.0	-0.7	522.6	0.0	1366.8	20.9
53	53	PL 3t 3/4"	0.009	0.010	0.003	1.40	1.50	1.40	0.33	0.1	0.0	0.0	-0.0	-0.7	522.7	0.0	1366.1	20.9



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_Southlgs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
52	32	AS 3t 5/8"	0.006	0.006	0.002	1.40	1.50	1.40	0.33	0.1	0.0	0.0	-0.0	-0.7	522.8	0.0	1365.3	21.0
51	274	HR17-4 seria	0.934	1.000	0.358	0.56	0.60	0.99	0.33	3.2	0.0	0.0	-0.9	88.0	522.8	0.0	1364.6	21.0
50	32	AS 3t 5/8"	0.006	0.006	0.002	1.41	1.50	1.41	0.33	0.1	0.0	0.0	-0.0	-0.7	526.1	0.0	1451.7	19.9
49	53	PL 3t 3/4"	0.009	0.010	0.003	1.41	1.50	1.41	0.33	0.1	0.0	0.0	-0.0	-0.7	526.1	0.0	1451.0	19.9
48	32	AS 3t 5/8"	0.006	0.006	0.002	1.41	1.50	1.41	0.33	0.1	0.0	0.0	-0.0	-0.7	526.2	0.0	1450.3	19.9
47	274	HR17-4 seria	0.940	1.000	0.341	0.56	0.60	1.00	0.33	3.3	0.0	0.0	-0.9	88.0	526.3	0.0	1449.6	20.0
46	32	AS 3t 5/8"	0.006	0.006	0.002	1.42	1.50	1.42	0.33	0.1	0.0	0.0	-0.0	-0.7	529.5	0.0	1536.7	19.0
45	53	PL 3t 3/4"	0.009	0.010	0.003	1.42	1.50	1.42	0.33	0.1	0.0	0.0	-0.0	-0.7	529.6	0.0	1536.0	19.0
44	32	AS 3t 5/8"	0.006	0.006	0.002	1.42	1.50	1.42	0.33	0.1	0.0	0.0	-0.0	-0.7	529.7	0.0	1535.3	19.0
43	274	HR17-4 seria	0.945	1.000	0.326	0.57	0.60	1.00	0.33	3.3	0.0	0.0	-0.9	88.0	529.7	0.0	1534.6	19.0
42	32	AS 3t 5/8"	0.006	0.006	0.002	1.42	1.50	1.42	0.33	0.1	0.0	0.0	-0.0	-0.7	533.0	0.0	1621.7	18.2
41	53	PL 3t 3/4"	0.009	0.010	0.003	1.42	1.50	1.42	0.33	0.1	0.0	0.0	-0.0	-0.7	533.1	0.0	1621.0	18.2
40	32	AS 3t 5/8"	0.006	0.006	0.002	1.42	1.50	1.42	0.33	0.1	0.0	0.0	-0.0	-0.7	533.2	0.0	1620.3	18.2
39	274	HR17-4 seria	0.950	1.000	0.313	0.57	0.60	1.01	0.33	3.3	0.0	0.0	-0.9	88.0	533.2	0.0	1619.6	18.2
38	32	AS 3t 5/8"	0.006	0.006	0.002	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-0.7	536.6	0.0	1706.7	17.5
37	53	PL 3t 3/4"	0.009	0.010	0.003	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-0.7	536.6	0.0	1706.0	17.5
36	32	AS 3t 5/8"	0.006	0.006	0.002	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-0.7	536.7	0.0	1705.3	17.5
35	274	HR17-4 seria	0.954	1.000	0.300	0.57	0.60	1.01	0.33	3.3	0.0	0.0	-0.8	88.0	536.8	0.0	1704.6	17.5
34	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	540.1	0.0	1791.8	16.8
33	53	PL 3t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	540.2	0.0	1791.1	16.8
32	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	540.3	0.0	1790.3	16.8
31	274	HR17-4 seria	0.957	1.000	0.289	0.57	0.60	1.01	0.33	3.4	0.0	0.0	-0.8	88.0	540.3	0.0	1789.7	16.8
30	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	543.7	0.0	1876.8	16.2
29	53	PL 3t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	543.7	0.0	1876.2	16.2
28	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	543.8	0.0	1875.4	16.2
27	181	1/2" MR	0.096	0.100	0.028	1.54	1.60	0.96	0.33	0.8	0.0	0.0	-0.2	-15.2	544.2	0.0	1868.6	16.3
26	32	AS 3t 5/8"	0.006	0.006	0.002	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	544.7	0.0	1859.3	16.3
25	53	PL 3t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	544.8	0.0	1858.6	16.3
24	33	AS 5t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-1.1	544.9	0.0	1857.9	16.3



**Global Southern Ocean HYPM Mooring Model Analysis**  
designed for 4786m Depth



<b>By: P. Chua</b>	<b>05-Aug-2014</b>	<b>DCN: 3201-00010</b>	<b>REV: B</b>	<b>REF.DES. GS02HYPM</b>
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Source: 05-Aug-2014 13:55:53, ...\Projects\Paul's m-files\OOI\Global\_South\gs2014hypm.cfg

Author: 05-Aug-2014 13:56:04, pchua@(PCWIN64)

**Event #003 – Simulation Parameter, cont.**

Current Profile Reference: 3201-00007\_CGSN\_Site\_Characterization\_Southern\_Ocean.pdf

#	ID	Element	Ax [	Ay m <sup>2</sup>	Az ]	Cx	Cy	Cz	Current [m/s]	Fx [	Fy	Fz kg	Fc	Fb ]	Tx [	Ty kg	Tz ]	Tilt [deg]
23	94	Swivel 5t	0.024	0.025	0.007	1.15	1.20	1.15	0.33	0.2	0.0	0.0	-0.0	-5.3	544.9	0.0	1856.8	16.4
22	33	AS 5t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-1.1	545.1	0.0	1851.4	16.4
21	53	PL 3t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-0.7	545.2	0.0	1850.3	16.4
20	33	AS 5t 3/4"	0.009	0.010	0.003	1.44	1.50	1.44	0.33	0.1	0.0	0.0	-0.0	-1.1	545.3	0.0	1849.5	16.4
19	478	Dual Release	0.276	0.288	0.081	1.15	1.20	0.86	0.33	2.0	0.0	0.0	-0.5	-61.0	545.4	0.0	1848.5	16.4
18	480	1/2" dropcha	0.023	0.024	0.007	1.53	1.60	0.96	0.33	0.2	0.0	0.0	-0.1	-6.8	547.3	0.0	1787.0	17.0
17	76	ML 17t 1-1/4	0.024	0.026	0.007	1.43	1.50	1.43	0.33	0.2	0.0	0.0	-0.1	-4.8	547.5	0.0	1780.1	17.1
16	34	AS 6t 7/8"	0.012	0.012	0.004	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-1.6	547.8	0.0	1775.2	17.1
15	53	PL 3t 3/4"	0.009	0.010	0.003	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-0.7	547.9	0.0	1773.6	17.2
14	32	AS 3t 5/8"	0.006	0.006	0.002	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-0.7	547.9	0.0	1772.9	17.2
13	181	1/2" MR	0.096	0.100	0.030	1.53	1.60	0.96	0.33	0.8	0.0	0.0	-0.2	-15.2	548.3	0.0	1766.0	17.3
12	32	AS 3t 5/8"	0.006	0.006	0.002	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-0.7	548.8	0.0	1756.7	17.4
11	64	EL 6t 7/8"	0.011	0.012	0.004	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-1.0	548.9	0.0	1756.1	17.4
10	34	AS 6t 7/8"	0.012	0.012	0.004	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-1.6	549.0	0.0	1755.0	17.4
9	113	Nystron-1"	0.496	0.520	0.156	1.24	1.30	0.02	0.33	3.5	0.0	0.0	-1.1	-2.0	550.8	0.0	1752.0	17.5
8	34	AS 6t 7/8"	0.012	0.012	0.004	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-1.6	552.6	0.0	1750.4	17.5
7	64	EL 6t 7/8"	0.011	0.012	0.004	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-1.0	552.8	0.0	1748.8	17.5
6	34	AS 6t 7/8"	0.012	0.012	0.004	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-1.6	552.9	0.0	1747.8	17.6
5	183	3/4" MR	0.143	0.150	0.046	1.52	1.60	0.95	0.33	1.2	0.0	0.0	-0.4	-33.0	553.5	0.0	1732.8	17.9
4	33	AS 5t 3/4"	0.009	0.010	0.003	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-1.1	554.2	0.0	1712.8	17.9
3	53	PL 3t 3/4"	0.009	0.010	0.003	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-0.7	554.3	0.0	1711.7	17.9
2	34	AS 6t 7/8"	0.012	0.012	0.004	1.43	1.50	1.43	0.33	0.1	0.0	0.0	-0.0	-1.6	554.4	0.0	1710.9	18.0
1	522	double MACE	1.200	1.200	0.000	1.20	1.20	1.20	0.33	8.3	0.0	0.0	0.0	-2742.1	554.5	0.0	1709.3	0.0