SIMBAD POST-PROCESSING PROGRAM

FOREWORD

THE **SIMBAD** POST-PROCESSING PROGRAM PROVIDES, FROM THE **SIMBAD** CALCULATION RESULTS:

- PLOTS OF TIME SERIES OF MOORING LINE AND FENDER LOADS
- PLOTS OF MOTIONS, SPEEDS AND ACCELERATIONS AT THE CENTER OF GRAVITY AND AT OTHER POSSIBLE POINTS OF THE SHIP

THESE RESULTS CAN BE ALSO POST-PROCESSED, IN ORDER TO OBTAIN:

- TABLES OF RESULTS, INCLUDING:
  - ➤ MINIMUM AND MAXIMUM VALUES OVER THE TIME SERIES, **F1/3** AND **F1/10** VALUES THAT ARE THE MEAN OF 3RD OR 10TH HIGHEST PART OF THE TIME SERIES DISTRIBUTION
  - ➤ THE MAXIMUM AND MINIMUM STATISTICAL VALUES GIVEN RESPECTIVELY BY: AVERAGE VALUE **+** OR **– 3.8** X STANDARD DEVIATION

NOTICE

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THE INPUT DATA ARE READ FROM THE SIMBAD OUTPUT FILES: "*.RES"

RESULTS ARE WRITTEN INTO DIFFERENT OUTPUT FILES:
➢ "MAX_MIN.TXT", FOR MOORING LINE AND FENDER LOADS
➢ "MOTIONCG.TXT", FOR THE MOTIONS, VELOCITIES OR ACCELERATIONS OF CENTRE OF GRAVITY
➢ "MOTIONPT.TXT", FOR THE MOTIONS, VELOCITIES OR ACCELERATIONS OF A SPECIFIC POINT

**THESE FILES ARE DESCRIBED IN DETAILS HEREAFTER.**

RUNNING THE SIMBAD POST-PROCESSING PROGRAM:
AN EXAMPLE OF RUN IS GIVEN HEREAFTER

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1: Tensions in lines,
2: Motions of CG,
3: Velocities of CG,
4: Accelerations of CG,
5: Motions of a particular point,
6: Velocities of a particular point,
7: Accelerations of a particular point
1

Reading the file results in the LINES.RES file
Time start (in s), default = 400s:
Time end (in s), default = 14300s:
```

CHOICE OF PARAMETER TO BE PLOTTED AND ANALYSED

DETERMINATION OF TIME START AND END FOR THE PLOTS AND ANALYSIS. GENERALLY, THE TIME START IS THE RAMP-UP TIME INTRODUCED IN THE SIMBAD PROGRAM AND THE TIME END THE LENGTH OF THE TIME SERIES. NEVERTHELESS, IT IS RECOMMENDED TO CUT OFF THE LAST 100 S AS THIS LAST TIME PERIOD MAY BE AFFECTED BY NUMERICAL INCONSISTENCIES DUE TO THE CALCULATION RANGE OF RADIATION DAMPING IRF (95S).

Figure 4 — Forces in lines and dolphins
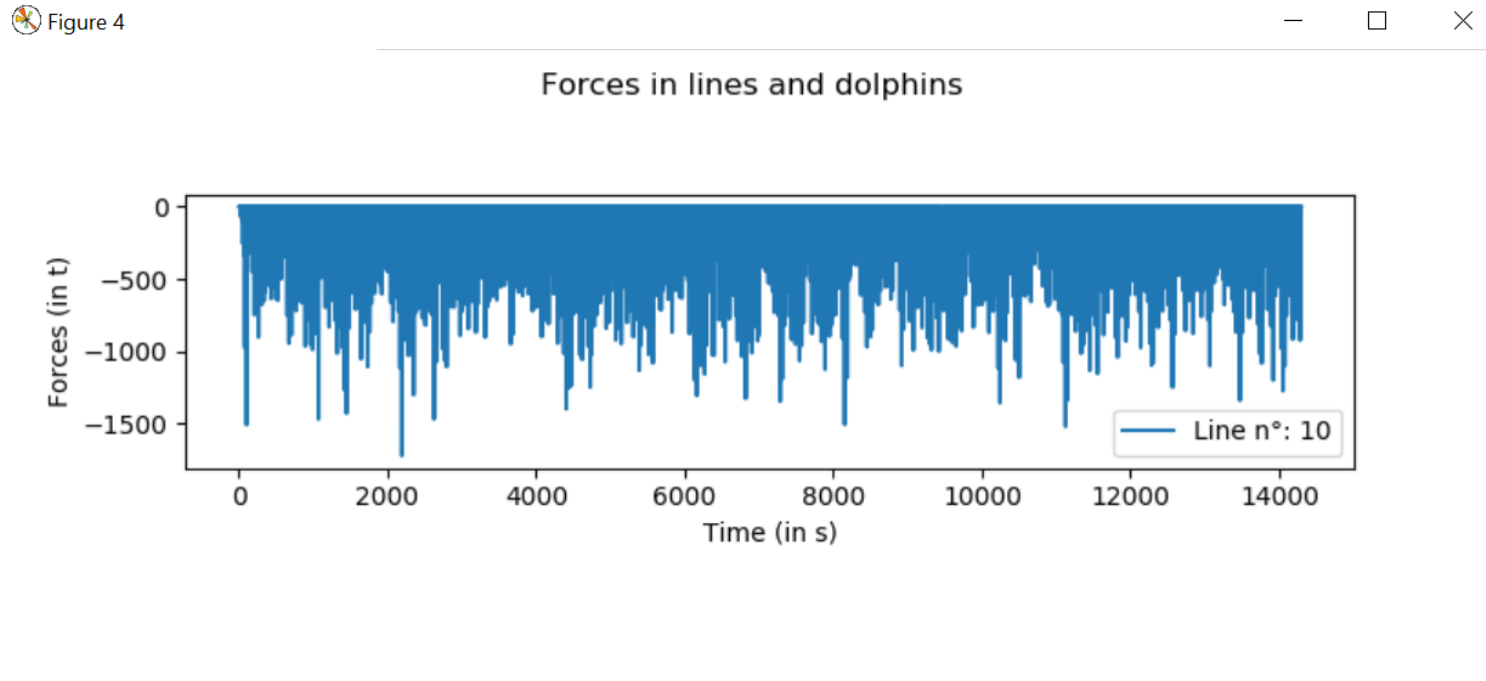
RUNNING THE SIMBAD POST-PROCESSING PROGRAM:
RESULT FILE "MAX_MIN.TXT", FOR MOORING LINE AND FENDER LOADS

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                Forces
Line n°:    Min       Max       Minst.      Maxst.      F1/3        F1/10
   1       0.00     112.10       0.00       92.94       65.15       77.77
   2       0.00     118.40       0.00       98.62       68.84       82.36
   3       0.00     113.80       0.00       94.30       66.07       78.82
   4      17.99      42.29      14.94       36.82       32.02       34.48
   5      16.55      50.38      13.37       43.08       36.81       40.20
   6       0.00     153.30       0.00      120.83       84.34      101.36
   7       0.00     158.60       0.00      124.87       86.85      104.66
   8       0.00     151.50       0.00      120.05       83.51      100.69
   9   -1521.00       0.00    -921.08        0.00     -813.07    -1013.06
  10   -1720.00       0.00    -973.65        0.00     -890.24    -1125.18
```

MINIMUM AND MAXIMUM VALUES, MAXIMUM AND MINIMUM STATISTICAL VALUES, F1/3 AND F1/10 VALUES

RUNNING THE SIMBAD POST-PROCESSING PROGRAM:
RESULT FILE "MOTIONCG.TXT", FOR THE MOTIONS, VELOCITIES OR ACCELERATIONS OF CENTRE OF GRAVITY

		Motion				
Type:	Min	Max	Minst.	Maxst.	F1/3	F1/10
SURGE	-0.049	0.0724	-0.062	0.0815	0.0458	0.0567
SWAY	-2.676	1.12	-2.193	1.6435	-1.274	-1.668
HEAVE	-1.281	1.381	-1.284	1.2818	-0.671	-0.857
ROLL	-3.81	3.443	-3.760	3.5198	-2.010	-2.520
PITCH	-0.034	0.0414	-0.037	0.0403	0.0220	0.0274
YAW	-0.494	0.3937	-0.498	0.4167	-0.268	-0.335

MINIMUM AND MAXIMUM VALUES, MAXIMUM AND MINIMUM STATISTICAL VALUES, F1/3 AND F1/10 VALUES

RUNNING THE SIMBAD POST-PROCESSING PROGRAM:
RESULT FILE "MOTIONPT.TXT", FOR THE MOTIONS, VELOCITIES OR ACCELERATIONS OF A PARTICULAR POINT

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|           Motion
|Type:      Min       Max       Minst.    Maxst.     F1/3      F1/10
|X         -2.772    1.215     -2.763     1.7640    -1.423    -1.761
|Y         -1.156    0.5952    -0.981     0.6425    -0.556    -0.728
|Z         -0.986    0.7788    -0.849     0.7255    -0.469    -0.584
```

MINIMUM AND MAXIMUM VALUES, MAXIMUM AND MINIMUM STATISTICAL VALUES, F1/3 AND F1/10 VALUES