# 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 $3^{RD}$ or $10^{TH}$ highest part of the time series distribution
  - The most probable maximum and minimum (MPM) statistical values of the peak reponses 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

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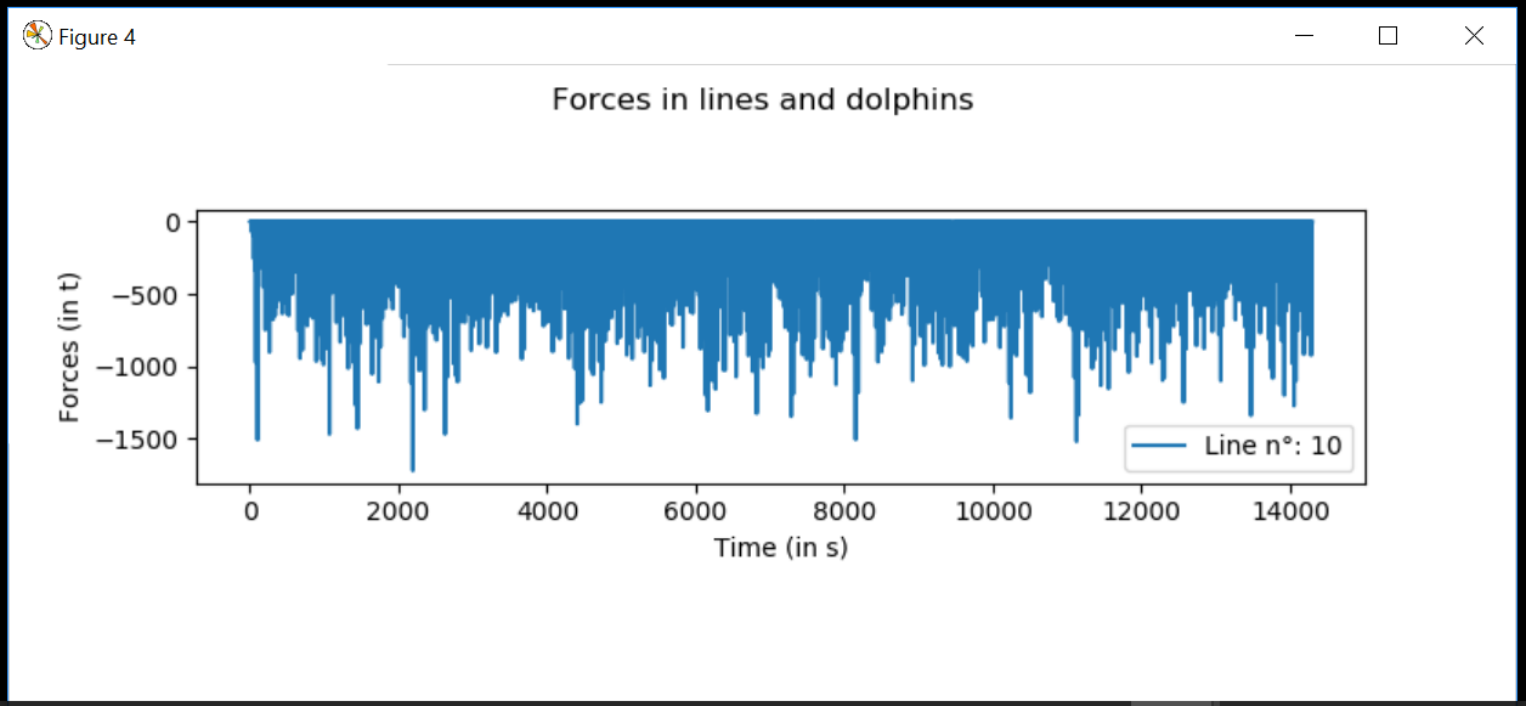

*Choice of parameter to be plotted and analysed*

*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).*



# Running the SIMBAD post-processing program: Result file “Max_Min.txt”, for mooring line and fender loads

| | Forces | | | | | |
|---|---|---|---|---|---|---|
| Line n°: | Min | Max | Minst. | Maxst. | F1/3 | F1/10 |
| 1 | 0.00 | 112.10 | 0.00 | 100.65 | 65.15 | 77.77 |
| 2 | 0.00 | 118.40 | 0.00 | 107.35 | 68.84 | 82.36 |
| 3 | 0.00 | 113.80 | 0.00 | 102.40 | 66.07 | 78.82 |
| 4 | 17.99 | 42.29 | 19.85 | 38.59 | 32.02 | 34.48 |
| 5 | 16.55 | 50.38 | 19.43 | 46.11 | 36.81 | 40.20 |
| 6 | 0.00 | 153.30 | 0.00 | 133.53 | 84.34 | 101.36 |
| 7 | 0.00 | 158.60 | 0.00 | 138.25 | 86.85 | 104.66 |
| 8 | 0.00 | 151.50 | 0.00 | 132.54 | 83.51 | 100.69 |
| 9 | -1521.00 | 0.00 | -1485.82 | 0.00 | -813.07 | -1013.06 |
| 10 | -1720.00 | 0.00 | -1642.66 | 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 | -0.059 | 0.0857 | 0.0458 | 0.0567 |
| SWAY | -2.676 | 1.12 | -2.494 | 1.1784 | -1.274 | -1.668 |
| HEAVE | -1.281 | 1.381 | -1.264 | 1.2610 | -0.671 | -0.857 |
| ROLL | -3.81 | 3.443 | -3.754 | 3.4590 | -2.010 | -2.520 |
| PITCH | -0.034 | 0.0414 | -0.035 | 0.0410 | 0.0220 | 0.0274 |
| YAW | -0.494 | 0.3937 | -0.514 | 0.3927 | -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

| | 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*