In-line VIVA:
HOW TO USE VIVA TO CALCULATE IN-LINE RISER VORTEX INDUCED OSCILLATIONS AND FATIGUE LIFE

USE VIVA VERSION 8.3

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USING VIVA TO PREDICT IN-LINE VIV AND FATIGUE DAMAGE

Program VIVA can be configured to calculate in-line vortex-induced vibrations. It must be noted that it will not calculate the combined inline and cross-flow responses, only the inline response and calculate also the fatigue damage.

INPUT FILES:

The input files for in-line VIVA are the same as for regular VIVA, so consult the VIVA manual except for the following: **THE ONLY DIFFERENCE IS TO USE DIFFERENT DATABASE:** In the input file that specifies the hydrodynamic database, 'no_files.in', instead of listing as first the file 'basic_bare", list the file 'basic_bare-inline'. Hence for bare risers use 'basic_bare-inline'. Also, always specify the internal scaling for high Reynolds number (not an external file). You can also use the file for strakes (both the standard strakes and the externally specified strakes) as well as standard fairing. The results for the strakes and the fairings have not been adjusted for in-line response but it is expected that the error is not significant.

Use the supplied files (also listed below) for 'no_files.in' and 'conditions.in' to make sure that you comply with the instructions above.

OUTPUT: The output is identical to that of regular VIVA but the results are for inline response.

EXAMPLE FILES TO USE

EXAMPLE FILE 'conditions.in'

```
 0
 1.000000E-06
 1    1
 0       0
 1
```

EXAMPLE FILE 'no_files.in'

```
2                              ! number of hydrodynamic files
basic_bare-inline   41   0     ! BASIC HYDRO DATA for smooth cylinder, in-line
'out_s.in'  15  4              ! file with strakes P/D=17, h/D=-0.25
```