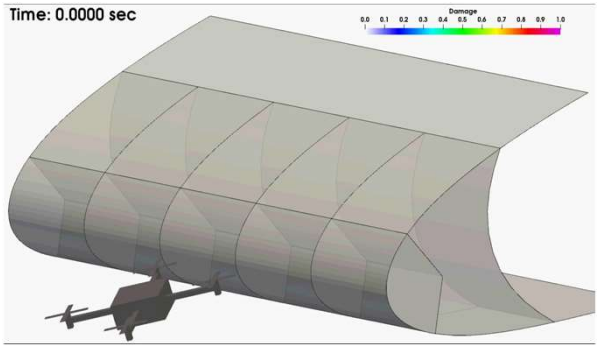
EUROPLEXUS Tutorials

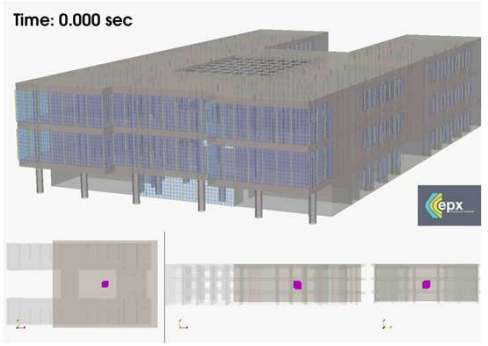
Introduction

Joint
Research
Centre

EUROPLEXUS Tutorials for Beginners

01. Introduction
02. FE Mesh Preparation
03. EPX Input File
04. Material Models
05. Element Types
06. PostProcessing
07. Impact Simulation
08. Blast Simulation
09. Fluid-Structure Interaction Simulation





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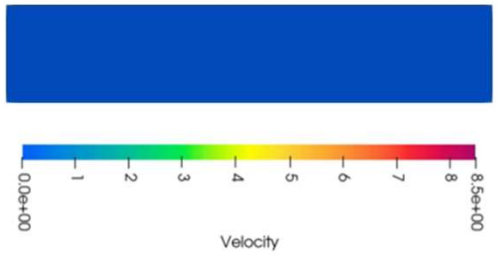
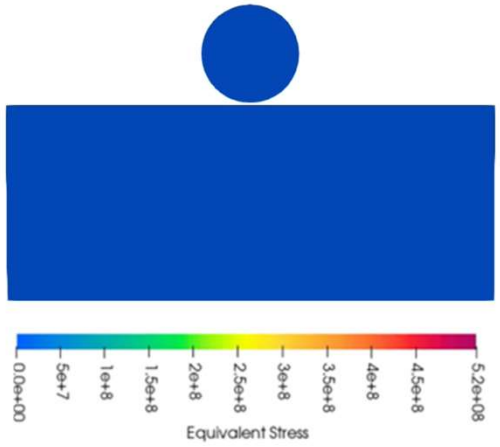
Case Studies

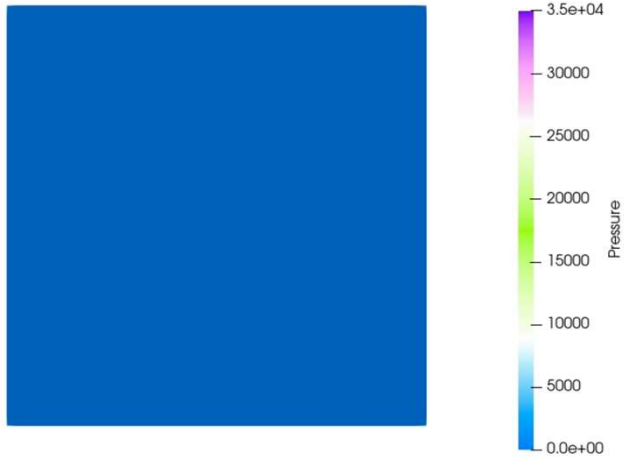
Beam Deflection



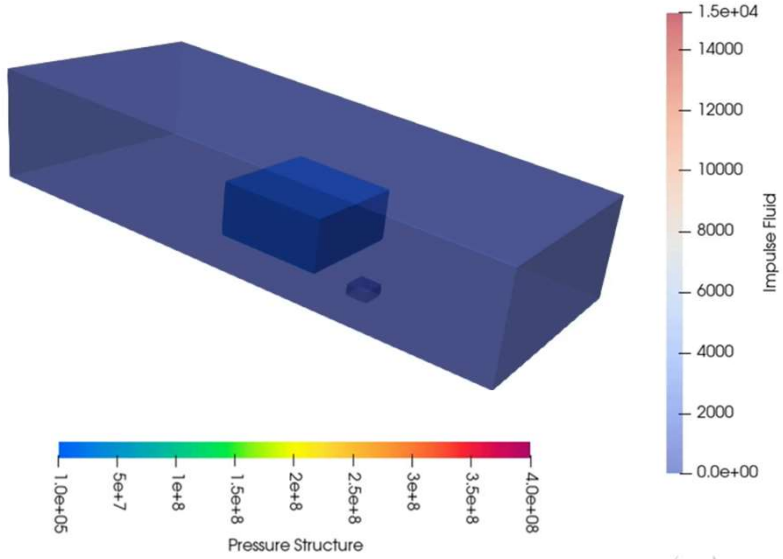
Impact



Blast



Fluid-Structure Interaction



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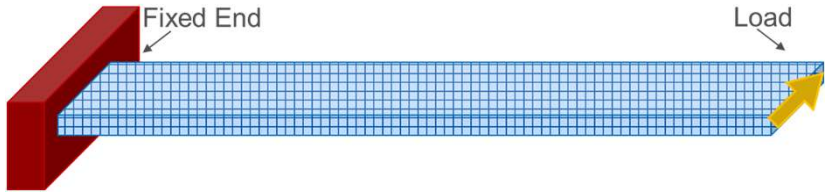
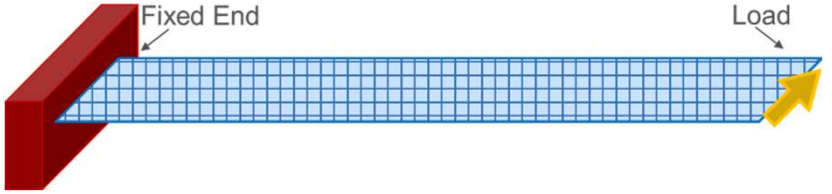
Solid Elements



Shell Elements



Beam Elements

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beam_deflection.epx

```
$ EUROPLEXUS Tutorial 2
$ ISPRA 2022 (A.Antoniou)
*****************************************************************************
*  Beam Deflection
*****************************************************************************
TUTORIAL 2 : Create epx file                    !title of the problem
ECHO                                            !output on the console

KFIL                                            !mesh file definition
TRID LAGR                                       !3d structural calculation

GEOM                                            !element type
    CUB8 PART 1
TERM

MATE                                            !material definition
    LINE RO 7800 YOUN 2.1E11 NU 0.3             !linear elastic
         LECT PART 1 TERM

LINK COUP                                       !coupled links
     BLOQ 123 LECT NSET 1 TERM                  !boundary conditions

CHAR 1 FACT 2                                   !loading condition
     FORC 1 -1.e3 LECT NSET 2 TERM              !force applied to the nodes
     TABL 2       0.      1.                    !time depended force
                  1.      1.

ECRI DEPL VITE CONT TFRE 1E-4                   !output into the listing file
     FICH PVTK VARI
               CONT ECRO ACCE VITE DEPL         !output into the ParaView file
        TFREQ 1E-3
        GROU AUTO

CALC TINI 0. TEND 20E-3   NMAX 10000000         !calculation parameters
FIN                                             !compulsory at the end of the data
```


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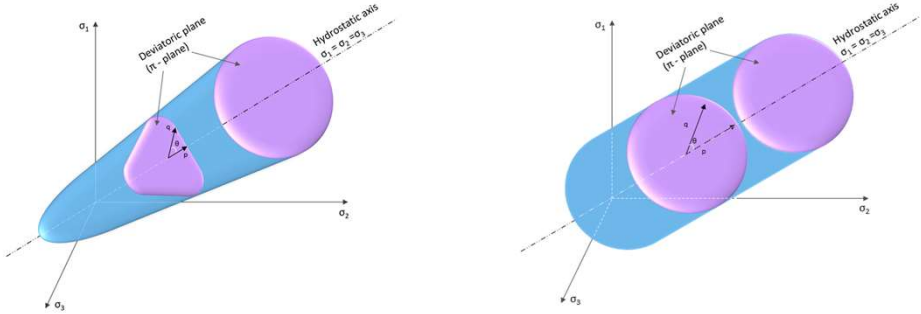
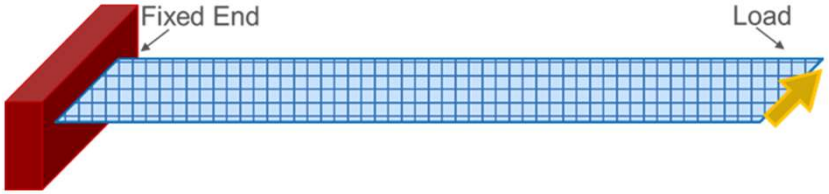
Dynamic Plastic Damage Concrete (DPDC) Von Mises (VM23)



Shell Elements



Beam Elements

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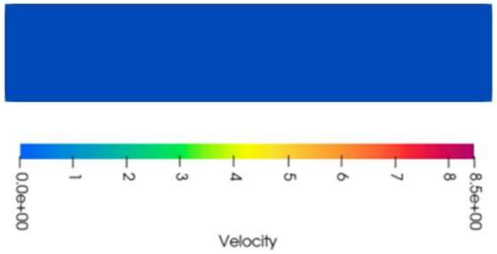

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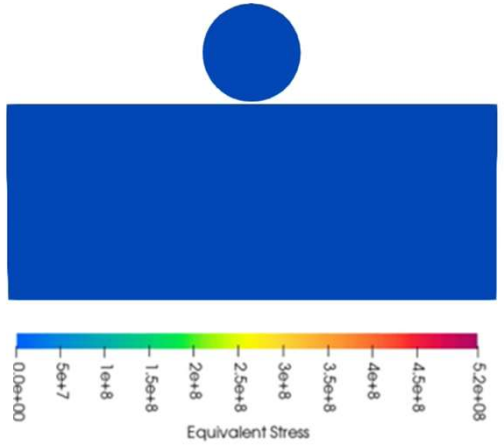

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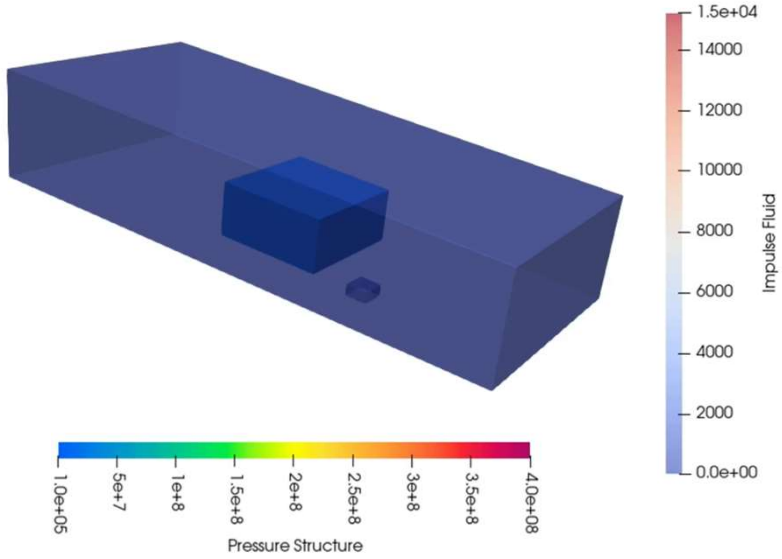

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