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Coupling Concept of Two Parallel Research Codes for Two and Three Dimensional Fluid Structure Interaction Analysis

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Abstract : This paper discuss a coupling strategy of two different software packages to provide fluid structure interaction (FSI) analysis. The basic idea is to combine the advantages of the two codes to create a powerful FSI solver for two and three dimensional analysis. The fluid part is computed by a program called PETSc-FEM, a software developed at Centro de Investigación de Métodos Computacionales (CIMEC). The structural part of the coupled process is computed by the research code elementary Parallel Solver (elPaSo) of the Technische Universität Braunschweig, Institut für Konstruktionstechnik (IK).

Keywords : computational fluid dynamics (CFD), fluid structure interaction (FSI), finite element method (FEM), software
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