8th. World Congress on Computational Mechanics (WCCM8)
5th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2008)
June 30 –July 5, 2008
Venice, Italy

Strong Coupling, partitioned Methods in FSI

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Key Words: *FSI, Multiphysics,Strong Coupling*

ABSTRACT

The simulation of the interaction between light-weight structure and the flow around them is a typical challenge in FSI. The range of application spans from large civil engineering structures to biological membranes interacting with the blood.

Recent advances in the solver technology allow the defintion of partition strongly coupled approaches which retain the computational efficiency of the single field solvers preserving the stability of the overall problem.

Current paper focuses on the application of a Fractional Step type approach to FSI and its application to light-weight membrane systems. The method, implemented in the multi-physic solver “Kratos” is validated on different “standard” test cases.