X International Conference on Computational Methods for Coupled Problems, COUPLED 2023
June 5-7, 2023, Chania, Crete, Greece

PARTICLE-BASED METHODS IN COUPLED PROBLEMS: ADVANCES AND APPLICATIONS IN DEM, PFEM, SPH, MPM, MPS AND OTHERS

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ABSTRACT

This Invited Session addresses both theoretical and practical aspects of particle-based computational methods that can be effectively used for solving Coupled Problems in solid mechanics, fluid mechanics, fluid-structure interaction, heat transfer, and many others.

Contributions dealing with the discrete element method (DEM), the particle finite element method (PFEM), the smoothed particle hydrodynamics method (SPH), the material point method (MPM) and the moving particle semi-implicit method (MPS), among others, are welcome. Likewise, the coupling of these methods with other established numerical procedures, such as the finite element method, the finite difference method and meshless techniques, will be considered.