

COUPLED APPROACHES BETWEEN PARTICLE AND CONTINUUM METHODS FOR SOLIDS MECHANICS AND FLUID-STRUCTURE INTERACTION PROBLEMS

ALEJANDRO CORNEJO^{†*}

^{*} Universitat Politècnica de Catalunya (UPC), Barcelona, Spain
C/ Gran Capità, s/n, Barcelona, Spain
alejandro.cornejo.velazquez@upc.edu and <https://www.upc.edu/en>

[†] Centre Internacional de Mètodes Numèrics a l'Enginyeria (CIMNE), Barcelona, Spain
C/ Gran Capità, s/n, Barcelona, Spain
acornejo@cimne.upc.edu and <https://www.cimne.com/>

ABSTRACT

The aim of this invited session is the presentation of numerical methodologies combining well-known particle methods (DEM, SPH, MPM, PFEM, etc...) with classical continuum approaches such as the FEM, XFEM, Phase field, among others.

This invited session aims to cover the state of the art, mathematical models, numerical methods and computational techniques of coupled continuum-particle methods applied to solid mechanics, fluid dynamics, fracture mechanics and fluid-structure interaction.

Works involving the industrial application and limitations of the current state-of-the art available coupled numerical technologies are also welcome to participate in this session.