RECENT ADVANCES IN MESHFREE AND PARTICLE METHODS

SEIICHI KOSHIZUKA * , KAZUO NISHIMOTO † , LIANG YEE CHENG $^+$

* The University of Tokyo 7-3-1, Hongo, Bunkyo-ku, Tokyo 113-8656, Japan koshizuka@sys.t.u-tokyo.ac.jp

> † University of São Paulo knishimo@usp.br

⁺ University of São Paulo cheng.yee@poli.usp.br

Key words: Free surface flow, Multi-phase flow, Large deformation, Phase change, Fluid-structure interaction, Multiphysics, Parallel processing, MPS, SPH, DEM

ABSTRACT

Meshfree and particle methods have been studied for computational mechanics ranging from basic mathematical theories to industrial applications. These methods have potentials to solve complex multi-physics problems involving free surface flow, multi-phase flow, phase change, fluid-structure interaction etc. Large-scale computation techniques are also investigated: for example, parallel processing using GPU (Graphics Processing Unit). The purpose of this minisymposium titled Recent Advances in Meshfree and Particle Methods is to provide discussions for researchers of the meshfree and particle methods to share their recent knowledge and advanced insights among engineers, mathematicians, computer scientists, and industrial researchers.