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DEVELOPMENT AND APPLICATIONS OF SPH METHOD

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ABSTRACT

Reliable design of structures and infrastructures, as well as analysis of complex physical flows deserve accurate and, sometimes, fast running computational tools. This need is becoming increasingly important because of the rise in frequency and severity of extreme weather events that adversely affect the input forcings.

In this context, Lagrangian meshfree particle methods offer many opportunities for modelling complex flows (characterized by large deformation, surface and interface tracking, non-Newtonian and multiphase fluids) and their interaction with structures and soil.

Among these numerical methods, the Smoothed Particle Hydrodynamics (SPH) has strong appeal and is widely adopted in many research and application fields, such as fluid and solid mechanics, geomechanics, industry processes.

Within this context, the thematic session aims to bridge experts in the SPH field and showcase the latest research and developments in problem-solving applications. Also, the intrinsic limitations of adopted numerical schemes (e.g., stability, consistency and converge) can be discussed, pointing out possible strategies to improve model reliability and results accuracy.

REFERENCES

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