

GAS PARTICLES MODELING AND SIMULATION

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ABSTRACT

The two-phase gas-particles flows are encountered in many engineering applications, including, risers and downers, pneumatic conveying systems, particle transport and erosion, deposition in turbo-machinery and so on. There are numerous questions arising when modelling such particles, as how effective is the contacting between gas and particles? how fast is the radial dispersion?, or how do these issues change with scale up?.

Prediction of particle motion, deposition rate and interaction with the fluid is crucial to design cost-effective industrial processes. Many relevant aspects still under research and don't given full satisfaction yet, among them particle drag forces formulation, a suitable turbulent models, particle volume fraction boundary conditions including rebounding wall condition, coupling with the Navier-Stokes equations and a stable and robust numerical discretization. Flow is invariably unsteady with a wide range of length and time scales as particles are continuously changing.

The mini-symposium pretends to cover any work related to these aspects including any advances in numerical analysis, modeling, coupling and simulation. Particles could be solid, gas or fluids, for instance droplets impingement, deformation using set-level methods are welcome. Works showing the application to complex geometries and the role and trend of such models in industry are encouraged.

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