A numerical study of the effects of gravity on horizontal particle-laden pipe flows



Zoom link: Please click this URL to start or join: https://adelaide.zoom.us/j/4282831194?pwd=dWxwNS9KRSsvSE9QSFNuaXpxMlVpUT09 Passcode: 998956

Introduction This work addresses gaps in understanding of particles transported in a flow, which are widely used in mineral processing and in emerging solar thermal technologies: • The independent influences of particle mass loading, particle size, and the effect of gravity and inertia on flow behaviour; The role of particles in turbulence modulation with the various combinations of the aforementioned parameters. **Aims and Objectives** Examine the flow behaviour under various regimes of the controlling dimensionless parameters (Φ_m , *Sk*, *Fr*, defined in **Figure 1**); Identify the various regimes for which the influence of gravity on flow behaviour is





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$$\frac{z_N}{D}\Big|_{U_p} = \frac{\iint (z/D) \times U_p(y,z) \, dydz}{\iint U_p(y,z) \, dydz},$$