

## Critical Velocities for Particle Transport from Experiments and CFD Simulations

**Authors :** Sajith Sajeev, Brenton McLaury, Siamack Shirazi

**Abstract :** In the petroleum industry, solid particles are often present along with the produced fluids. It is imperative to keep particles from accumulating in flow lines. In this study, various experiments are conducted to study sand particle transport, where critical velocity is defined as the average fluid velocity to keep particles continuously moving. Many parameters related to the fluid, particles and pipe affect the transport process. Experimental results are presented varying the particle concentration. Additionally, CFD simulations using a discrete element modeling (DEM) approach are presented to compare with experimental result.

**Keywords :** particle transport, critical velocity, CFD, DEM

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