

Synopsis

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Simulation of the National Energy Technology Laboratory Fluidized Bed Challenge Problem

This research migration project aims to simulate the National Energy Technology Laboratory (NETL) Small Scale Challenge Problem (SSCP-I) using OpenFOAM. The simulation uses the two-fluid solver, `twoPhaseEulerFoam` to simulate a 2D fluidized bed and compare the results of the simulation against the experimental data from NETL. The project aims to migrate the study by Lungu et. al. [1] conducted using the Euler-granular model in the commercial CFD code Fluent. The study uses two different drag models: Gidaspow-Ergun-Wen-Yu and Syamlal-O'Brien, and compares the results against the experimental data.

References

- [1] Musango Lungu et al. "TFM simulations of the NETL bubbling fluidized bed challenge problem". In: *Industrial Engineering Chemistry Research* 55 (Mar. 2016). DOI: 10.1021/acs.iecr.5b04511.