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. Lungu et al. 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.