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Evaluation of the turbulence models for gas flow and particle transport in URANS and LES of a cyclone separator

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Highlights

- DRW and CRW models are implemented in OpenFOAM for dispersion of particles in a cyclone.
- The dispersion model is essential for accurate prediction of the particle collection efficiency.
- LES performs better than RSTM for the axial velocity of unsteady turbulent flow.
- CRW predicts the overall collection efficiency better than DRW in RSTM.
- LES gives the better prediction of the overall collection efficiency than RSTM.

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