EFFECT OF INITIAL CONDITIONS IN THE FAR FIELD OF SPATIALLY DEVELOPING TURBULENT PLANAR JETS

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ABSTRACT

Regarding spatial and temporal simulations of turbulent plane jets, a procedure is developed for generating inlet boundary conditions and initial conditions for the spatial and temporal cases, respectively. The procedure comprises the following steps:

- i Running a channel flow DNS simulation until statistically stationary turbulence is achieved.
- ii Interpolating the channel flow data into the desired plane jet grid (2D or 3D).
- iii Building the inlet boundary or initial conditions for the plane jet by adding the interpolated data to a co-flow.
- iv Apply bridging between co-flow and interpolated data if necessary.
- v Running the plane jet simulation.

This procedure increases the realism of the simulation and significantly reduces the computational cost.

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