

Study of the influence of the inlet boundary conditions in a LES simulation of internal flow in a diesel injector

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In this paper the study of the behavior of the fuel flow through the injector nozzle using CFD tools is presented. Large Eddy Simulation will be used to model the internal flow turbulence in a Diesel fuel injector with velocities over 500 m/s. More specifically, the influence of boundary conditions applied to the model will be studied. The article analyses the influence of the inlet boundary condition upon activation and maintenance of turbulence flow during the calculation. Carefully assessing which inlet boundary condition is more trustworthy with reality, for this the outlet velocity, pressure, turbulence and level of stabilization will be studied on non-cavitating conditions.