ANALYSIS OF THE MECHANISMS OF TURBULENT COMBUSTION USING CALCULATION DATA BASED ON THE PARTIALLY STIRRED REACTOR MODEL

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Abstract: Two examples of application of the partially stirred reactor models to the description of flows with turbulent combustion are presented — simulation of Cheng *et al.* experiment on the combustion of a hydrogen supersonic jet in coflowing supersonic air flow and Magre *et al.* experiment on methane–air premixed combustion in a subsonic flow in a duct with a back facing step. The simulation results are compared with the experiments and with calculations by other authors. The focus is on the analysis of the combustion stabilization mechanisms based on the calculation results.

Keywords: turbulent combustion; turbulence–combustion interaction; partially stirred reactor; combustion stabilization mechanism; validation of calculations

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