Comparison of eddy dissipation model and presumed probability density function model for temperature prediction in a non-premixed turbulent methane flame

Abstract

Temperature distribution is predicted through numerical simulation of a turbulent non-premixed methane flame using the standard Eddy Dissipation Model (EDM) and a model based a presumed shape of probability density function (PDF) along with an equilibrium chemistry model. Results are validated against existing experimental data. Two models are compared to each other in terms of accuracy and their advantages and disadvantages are discussed.