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Parametric modeling studies of turbulent non-premixed jet flames with thin reaction zones HAIFENG WANG, Purdue University — The Sydney piloted jet flame series (Flames L, B, and M) feature thinner reaction zones and hence impose greater challenges to modeling than the Sanida Piloted jet flames (Flames D, E, and F). Recently, the Sydney flames received renewed interest due to these challenges. Several new modeling efforts have emerged. However, no systematic parametric modeling studies have been reported for the Sydney flames. A large set of modeling computations of the Sydney flames is presented here by using the coupled large eddy simulation (LES) /probability density function (PDF) method. Parametric studies are performed to gain insight into the model performance, its sensitivity and the effect of numerics.

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