RADIATIVE BEHAVIOR OF A HONEYCOMB RADIANT BURNER

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ABSTRACT. Radiative transfer inside a monolithic burner is calculated by a previously validated isotropically scattering model for an equivalent continuous medium. This radiation model is coupled with combustion, species transport and other heat transfer modes taking into account impingement heat transfer and local transfer at the interfaces. It has been shown that the flame location and its stabilization also depend on the impingement effect and on a local heat transfer coefficient. The global radiative flux issued from the system strongly depends on radiative boundary conditions at the ends of the burner.