

Abstract Submitted
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Vortex Shedding of Various Bluff Bodies in a Cross Flow and Flame Luminosity CHRISTOPHER RUSCHER, JOHN DANNENHOFFER, MARK GLAUSER, Syracuse University, BARRY KIEL, BALU SEKAR, Air Force Research Laboratory, ROBERT KAPAKU, Ohio State University — A comparison between flame luminosity and non-combusting flows was made in order to better understand the effects combustion and the flame have on the fluid dynamics of a flow. A large eddy simulation (LES) of a cylinder in a cross flow was done at different Reynolds number in order to make the comparison between flame luminosity and non-combusting flows using OVERSET grid technology. Proper orthogonal decomposition (POD) was done for the different cases in order to compare how much energy is contained in symmetric, asymmetric, and uncorrelated POD modes. Initial results show the modal energies of the non-combusting flow do not match the modal energies of the flame luminosity.

Christopher Ruscher
Syracuse University

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