Combustion instabilities in industrial applications: modeling and numerical simulations.

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Virtually all combustion chambers are subject to flame instabilities. In the context of gas turbine engines, it can lead to a simple loss of performances, but also to catastrophic damages in the worst case. Consequently there is a need to better understand combustion instabilities in order to control them. In this talk, I will review the fundamental physics behind combustion instabilities as well as the techniques employed in the industry to model them: from a simple onedimensional tube that allows the derivation of an analytical solution, to intensive high-performance computing with large-eddy-simulations of realistic aeronautical gas turbines.

Thursday, November 9, 2017
4:30 PM in SCI 242
Refreshments will be served at 4:20 p.m.