Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Direct numerical computation of linear stability of gaseous detonations DMITRY KABANOV, ASLAN KASIMOV, King Abdullah Univ of Sci Tech (KAUST) — We develop an algorithm for the computation of linear stability of gaseous detonations that combines the elements of normal-mode analysis and direct simulation. A shock-fitting method is applied to governing equations which are linearized assuming the general time dependence. The computed time series of the shock perturbation is postprocessed to determine the growth rate of instability and neutral boundaries. The method is applied to the reactive Euler equations and its simplified analogs.

Dmitry Kabanov
King Abdullah Univ of Sci
Tech (KAUST)

Date submitted: 31 Jul 2016 Electronic form version 1.4