

Keio University Global Research Institute (KGRI)  
Lecture series

# Computation of gaseous detonation waves with losses

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**日時 (Date & Time) :**

**Wednesday, February 5, 2020 13:30-14:30 (Open 13:15)**

**会場 (Venue) :**

**16th Building-A 3F Meeting Room, Yagami Campus, Keio University**

**主催 (Host) :**

**Keio University Global Research Institute's Creativity Initiative**

**講演概要 ( Summary of Lecture ) :**

Gaseous detonations consist of shock waves sustained by the energy release due to a chemical mechanism. The large pressures generated can thus be harmful to goods and persons, but on the other hand, can provide a formidable opportunity to generate thrust for propulsion applications. The talk will focus on the conditions at which the detonations can propagate, and more specifically, the structure of the flowfield of these reactive fronts when subjected to losses, which can lead to its failure. Two specific non-ideal configurations will be discussed: the propagation of detonations in narrow channels and detonations bounded by an inert layer. Moreover, we will examine the influence of the modeling of the chemical kinetics as well as the equation of state. Then, we will examine to which extent the hydrodynamic thickness can be used as a characteristic length scale in the analysis of the detonation propagation process.

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Free admission, Open to anyone,  
Pre-registration not required