Séminaires @ ICARE

Transition from deflagration to detonation (DDT) and detonation propagation in reactive layers: *Experiments and simulations*

by

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This talk concerns the experimental and numerical investigations performed at UC of Southeast Norway (former Telemark) on DDT in hydrogen air and detonation propagation in a reactive layer.

The experimental results focus on high-speed imaging of the DDT process or failure to form a stable detonation. The numerical studies concern detonation propagation in reactive layers where the reactive fuel-oxidizer layer has a neighboring inert layer.

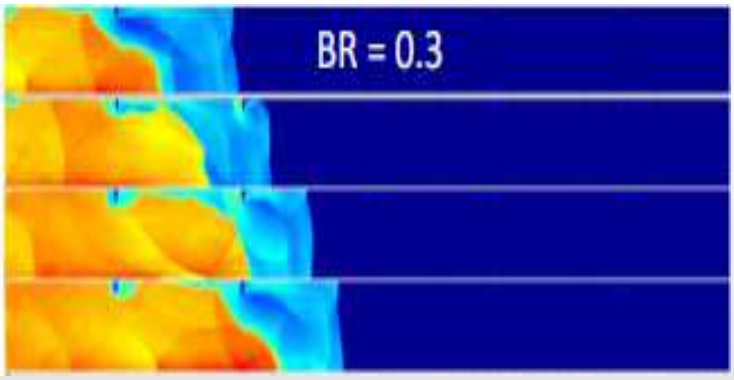

Fig. 1: Temperature contours in a propagating fast flame in methane-air

Fig. 2: Photo of the "Big Blue" explosion rig

Knut Vaagsaether is an Associate Professor at UC of Southeast Norway, with a PhD in modelling of gas explosions. His main research fields are DDT and detonations, flame acceleration and rapid boiling in compressed liquefied gases, among other topics. Prof. Vaagsaether is on the board of the Nordic-Scandinavian section of the Combustion Institute and is a member of the expert group on hydrogen safety IEA-HIA Task 37.

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