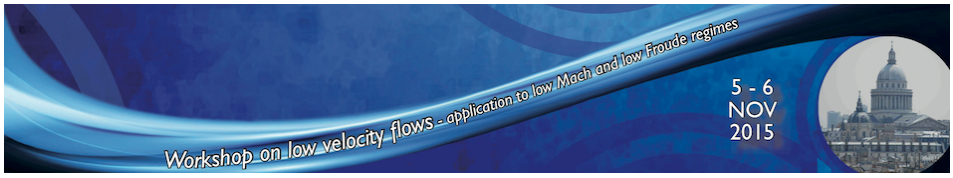

ID de Contribution: **10** Type: **Non spécifié**

CDMATH library and low-Mach models applied to two-phase flows with Adaptive Mesh Refinement

jeudi 5 novembre 2015 14:45 (45 minutes)

This work presents the incremental implementation of the simulation of two-phase flows in low-Mach conditions, particularly for dilating bubbles in a nuclear core. We use CDMATH, a new easy-to-use and open-source library, which relies on the rich MED Coupling library for powerful visualization. We provide simple tools for patch-based Adaptive Mesh Refinement (AMR) designed with parallel and balanced computing in mind. With AMR, we refined the coarse mesh on a set of patches in order to locally improve the precision in regions of interest and such that we finely capture changes located at the interface. The models we present are simplified but necessary steps to obtain efficient simulation of the incompressible Navier-Stokes model and of the low Mach model with interface.

This research is a joint work together with Grégoire Allaire, Stéphane Dellacherie and Samuel Kokh. It is sponsored by the CEA (French Atomic Energy Commission) and the DGA (French ministry of defense).

Orateurs: MEKKAS, Anouar (DEN/DANS/DM2S, CEA SAclay); TALPAERT, Arthur (DEN/DANS/DM2S, CEA Saclay & CMAP)