Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

On air entrapment and splashing treshold in drop impacts[1]
CHRISTOPHE JOSSERAND, PASCAL RAY, STÉPHANE ZALESKI, Institut D'Alembert, Paris. CNRS & UPMC — We investigate here how the surrounding gas influence the dynamics of drop impacts on a thin liquid film. We describe in details the entrapment of the gas bubble using numerical simulations with high enough mesh resolution. The bubble entrapment comes from viscous effect in the thin gas layer that need to be evacuated down the drop, creating a high pressure field that deforms the drop interface into a dimple. We finally investigate how this dynamics coupling gas and liquid dynamics can change the splashing dynamics.

[1]ANR "Deformation" ANR-09-JCJC-0022

Christophe Josserand
Institut D'Alembert Paris, CNRS & UPMC

Date submitted: 02 Aug 2010 Electronic form version 1.4