1113-35-300   **Ludovic Goudenège*** (`goudenege@math.cnrs.fr`), Grande Voie des Vignes, 92295
Chatenay-Malabry, France. *Phase field model of Cahn-Hilliard type for coating process.*

A coating process is a complex phenomenon. In order to simulate it, we need at least two equations. One for the dynamic of the fluid and one for the interface between the different species. We will present a phase field model of Cahn-Hilliard type coupled with the Navier-Stokes equations. In particular we extend the model to take into account the dynamic of surfactant. The main difficulty is to control the physical effects induced by this new dynamics. Moreover this is a particularly challenging situation where the density ratio is close to 1000 and the viscosity ratio is close to 100. We will present theoretical and numerical results. (Received August 25, 2015)