XVème Colloque Franco-Roumain de Mathématiques Appliquées
Toulouse, 29 Aout - 2 Septembre, 2022

On a cavitation model including bubbles in thin film lubrication

Ionel Sorin Ciuperca

Université Lyon 1, France

ciuperca@math.univ-lyon1.fr

Abstract: In lubrication problems, cavitation is considered as a fundamental element to correctly describe the characteristics of the thin fluid flow.
We consider here a cavitation model consisting of a coupled problem between the Reynolds partial differential equation (that describes the flow) and the Rayleigh-Plesset equation (that describes micro-bubbles evolution). We study the well-posedness of this coupled problem and the existence and stability of stationary solutions.