

Speaker: Noemi David

Title: *On the incompressible limit for porous medium models of tumor growth*

Abstract:

Both compressible and incompressible models of porous medium type have been used in the literature to describe the mechanical aspects of living tissues. Using a stiff pressure law, it is possible to bridge the gap between these two different representations. In the incompressible limit, density-based models generate free boundary problems of Hele-Shaw type where saturation holds in the moving domain. I will present some results for advection-porous medium equations motivated by tumor growth. The main novelty consists in establishing the limit pressure equation for which it is crucial to prove the strong compactness of the pressure gradient. Then, I will discuss the convergence rate of solutions of the compressible model to solutions of the Hele-Shaw problem.