

Speaker: Guy Vallet

Title: *Some obstacle problems with Lewy-Stampacchia's inequalities*

Abstract:

This talk presents some results on obstacle problems for nonlinear PDEs, and the associated Lewy-Stampacchia inequalities, mainly for pseudo-monotone Leray-Lions operators. We will examine several types of PDE: elliptic and parabolic in the deterministic case, parabolic and first-order hyperbolic in the stochastic one. The technique is based in passing to the limit in a penalization procedure of the constrain and the Lewy-Stampacchia inequalities are stability estimates of the corresponding Lagrange multiplier. Emphasis will be placed on how these inequalities are also a tool for obtaining existence results.