

ABP estimates and first exit time in cylindrical domains

Antonio Vitolo

Dipartimento di Matematica, Università di Salerno, Via Giovanni Paolo II 132, 84084 Fisciano (SA), Italy

Abstract

In a recent paper we proved existence and uniqueness results of second-order fully nonlinear uniformly elliptic equations with Dirichlet boundary conditions, including the mean first exit time for a stochastic process, in domains of cylindrical type. In this talk, based on the improved Alexandroff-Bakelman-Pucci estimate, we show that this result can be used to estimate higher moments of the first exit time, as well as how it can be extended to more general operators, playing a role in geometric problems of mean partial curvature and stochastic differential games.