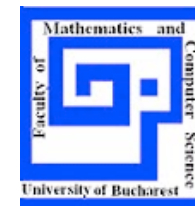




Potential Theory Seminar



**Simion Stoilow Institute of Mathematics
of the Romanian Academy**

**Faculty of Math. and Computer Science
University of Bucharest**

Obstacle problems for parabolic SDEs with Hölder continuous diffusion: from weak to strong solutions

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Tuesday, February 25th 2020, 14:00 h

Hall no. 1, Faculty of Mathematics and Computer Science

Abstract: The talk focuses on the qualitative analysis of the following stochastic variational inequality

$$du(t) + A(t, u(t))dt + \partial K(t)(u(t))dt \ni g(t, u(t))dW(t),$$

considered in a Gelfand--Lions triple space setup $V \subset H \subset V^*$. We study the existence and uniqueness of a strong solution under the assumption of Hölder continuity for the diffusion coefficient of our obstacle problem. Imposing some weaker assumptions on the barriers, we provide the existence of a weak variational solution for the multivalued problem. Moreover, the asymptotic behavior of the solution and a maximum principle are provided.