

October 11th, 2021
Zoom Meeting
2:00 P.M. - 3:00 P.M.

Prof. Mykhaylo Shkolnikov
(Princeton University)

Probabilistic approach to free boundary problems and applications

Abstract: We will discuss a recently developed probabilistic approach to (singular) free boundary problems, such as the supercooled Stefan problem. The approach is based on a new notion of solution, referred to as probabilistic, which arises naturally in the context of large system limits of interacting particle systems. In the talk, I will give an example of how such interacting particle systems arise in applications (e.g., finance), then obtain a solution of a free boundary problem in the large system limit, and discuss how this solution can be analyzed mathematically (thereby answering natural questions about the systemic risk in financial systems and neural synchronization in the brain). The talk is based on recent and ongoing joint works with Sergey Nadtochiy, Francois Delarue, Jiacheng Zhang and Xiling Zhang

Zoom link:

Topic: Math Finance Colloquium (USC)

Time: Oct 11, 2021 02:00 PM Pacific Time (US and Canada)

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