

On suprema of Levy processes and applications in risk theory

Abstract: Cramer-Lundberg model is the oldest and the most famous model for the insurance risk process. The answer to the ruin probability in this model is given by the Pollaczek-Khintchine formula. In this talk I will explain the structure of that formula and show how this structure is preserved in various generalizations of the Cramer-Lundberg model. All discussed models are based on one-dimensional Levy processes. The main technical problem that I will discuss is how does a Levy process reach its supremum.