

MODELING ANOMALOUS DIFFUSION BY A SUBORDINATED FRACTIONAL LÉVY-STABLE PROCESS

AGNIESZKA WYŁOMANSKA (JOINT WORK WITH MAREK TEUERLE AND GRZEGORZ SIKORA)

Two phenomena which can be discovered in systems with anomalous diffusion are long-range dependence and trapping events. The first effect concerns events that are arbitrarily distant but still influence each other exceptionally strongly, which is characteristic for anomalous regime. The second corresponds with the presence of constant values of the underlying process. Motivated by relatively poor class of models which can cover these two phenomenon, we introduce subordinated fractional Lévy-stable motion with tempered stable waiting times. We present in details its main properties, propose simulation scheme and give an estimation procedure of its parameters. The complementary part of the paper is the presentation, via Monte Carlo approach, of parameters estimation effectiveness.