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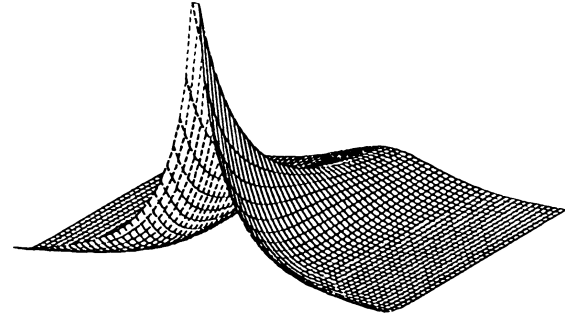
БОЛЬШОЙ СЕМИНАР КАФЕДРЫ ТЕОРИИ ВЕРОЯТНОСТЕЙ

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06 ноября 2019 г. — **В.Н. Колокольцов** (Университет Уорика, СПбГУ, НИУ ВШЭ)

Duality of Markov processes, its generalizations, characterizations and applications

We introduce a notion of k-th order stochastic monotonicity and duality that allows one to unify the notion used in insurance mathematics (sometimes refereed to as Siegmund's duality) for the study of ruin probability and the duality responsible for the so-called put – call symmetries in option pricing. Our general k-th order duality can be financially interpreted as put – call symmetry for powered options. The main objective is to develop an effective analytic approach to the analysis of duality of Markov processes leading to its full characterization in terms of their generators.

Papers on the topic:

1) Vassili Kolokoltsov. Stochastic monotonicity and duality for one-dimensional Markov processes. arXiv:1002.4773 (2010). Mathematical Notes **89:5** (2011), 652-660.

2) Vassili Kolokoltsov and RuiXin Lee. Stochastic duality of Markov processes: a study via generators. https://arxiv.org/abs/1304.1688 Stochastic Analysis and Applications **31:6** (2013), 992-1023.

3) Vassili Kolokoltsov. Stochastic monotonicity and duality of kth order with application to put-call symmetry of powered options. http://arxiv.org/abs/1405.3894 Journal of Applied Probability **52:1** (2015), 82-101.

Семинар проводится по средам в аудитории 12-24 Главного Здания Московского Государственного Университета им. М.В. Ломоносова с 16:45 до 17:45

Координатором семинара на осенний семестр 2019 года назначен доцент Дмитрий Александрович Шабанов

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