

*11:30-12:05 Petr Čoupek (Faculty of Mathematics and Physics, Charles University, Praha, Czech Republic)*

**Path regularity of solutions to SDEs with multiplicative fractional noise**

Petr Čoupek (Charles University), František Hendrych (Charles University), Martin Ondreját (The Czech Academy of Sciences), Jakub Slavík (The Czech Academy of Sciences)

The talk will be devoted to the regularity of sample paths of solutions to SDEs with nonlinear multiplicative fractional noise. It is well known that fractional Brownian motions have paths in a certain exponential Besov-Orlicz space. This fact follows from a refinement of the classical Kolmogorov continuity criterion that applies to Gaussian processes. I will present an extension of this criterion that applies to non-Gaussian processes and use it to show that paths of other fractional processes, such as Rosenblatt or higher-order Hermite processes, also belong to a certain Besov-Orlicz space. Subsequently, I will consider SDEs with nonlinear multiplicative fractional noise and show that the rough-path solutions retain the Besov-Orlicz path regularity of the driver.