Log-periodically disturbed fractional calculus

Svenja Lage
*Heinrich-Heine University Düsseldorf*
Svenja.Lage@hhu.de

It is well-known that stable distributions solve particular fractional diffusion equations. In this talk, we develop a similar connection between semistable densities and diffusion equations involving log-periodically disturbed fractional derivatives. Starting from this connection, we discuss the properties of these operators, which allow us to model log-periodically disturbed long-range dependencies. Furthermore, we solve corresponding diffusion equations and apply our theory to real-world applications.