

# Fractional Kinetic Equations for “Tame” Lévy Flights

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In the talk, I consider three models of “tame” Lévy-like random processes, which possess finite variance in contrast with free Lévy flights, namely,

- (i) confined Lévy flights, i.e., Lévy flights in external non-linear potential fields;
- (ii) damped Lévy flights, i.e., Lévy flights in stochastic systems with non-linear friction; and
- (iii) power law truncated Lévy flights.

In particular, I discuss the following properties of tame Lévy flights:

- non-Boltzmann stationarities,
- power law asymptotics of the probability densities, which are steeper than the asymptotics of the densities of the Lévy flights,
- bifurcations during relaxation, and
- evolution of the probability density function from the Lévy stable law towards the Gaussian law.

These properties are discussed with the use of analytical and numerical solutions of fractional kinetic equations as well as numerical simulation based on the Langevin approach.

## References

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