

# Statistical Physics and Anomalous Dynamics of Foraging

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The title of this talk denotes the theme of a PKS Advanced Study Group which is active from July to December 2015. This talk offers an introduction to our research topic. I briefly review the problem whether biologically relevant search strategies can be identified by statistical data analysis and mathematical modeling. A famous paradigm in this field is the *Lévy hypothesis*. It states that under certain mathematical assumptions Lévy dynamics, which defines a key concept in the theory of anomalous stochastic processes, leads to an optimal search strategy for foraging biological organisms. This hypothesis is discussed controversially in the current literature. I will give examples and counterexamples of experimental data and their analyses confirming and refuting it. To the end I will briefly outline the concept of our Advanced Study Group, and its (planned) activities.

nb: I have given a similar version of this talk in the Division Biological Physics at PKS one year ago.