

Statistical Physics and Anomalous Dynamics of Foraging: First Focus Week Meeting

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Luca Giuggioli, Rainer Klages, Jon Pitchford

Advanced Study Group 2015
Max Planck Institute for the Physics of Complex Systems

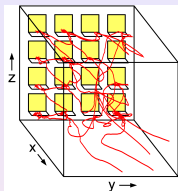
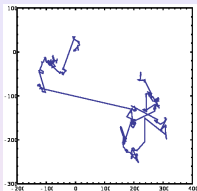
MPIPKS Dresden, 8 September 2015



Queen Mary
University of London



Advanced Study Group 2015 on foraging



- **Topic:** Statistical physics and anomalous dynamics foraging
- **Main theme:** Understand search for food of biological organisms by mathematical modeling
- **Duration:** 6 months from July 1st until December 31st, 2015
- **Concept:** Bring together a team of experts working on the chosen topic, supported by a vivid visitors programme

The ASG Team

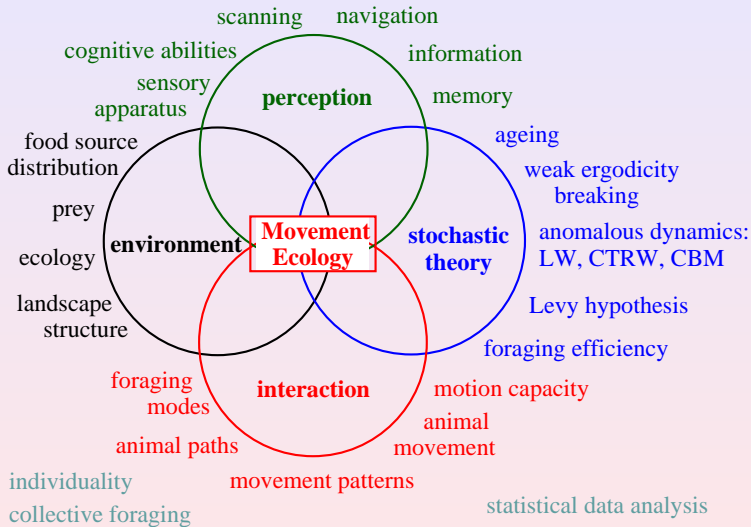


- **experiments on foraging and data analysis:**
 - Frederic Bartumeus (Blanes, Spain)
 - Jon Pitchford (York, UK)
- **statistical physics applied to foraging:**
 - Denis Boyer (UNAM, Mexico)
 - Luca Giuggioli (Bristol, UK)
- **anomalous stochastic theory applied to biological dynamics:**
 - Aleksei Chechkin (Kharkov, Ukraine)
 - RK (London, UK)

Key topics and activities

- 1 Critically assess the **Lévy hypothesis**.
 - 2 Test **other types of anomalous stochastic dynamics** for modeling foraging.
 - 3 How to define **optimality** for foraging?
 - 4 Assess the influence of **external environmental constraints** on foraging.
 - 5 Assess the influence of **internal conditions** of a forager on foraging.
 - 6 Study **collective foraging**.
- **two focus weeks in September and November**
 - **webpage: http://www.mpipks-dresden.mpg.de/~asg_2015**

Scope of this meeting



[inspired by Nathan et al., PNAS **105**, 19052 (2008)]