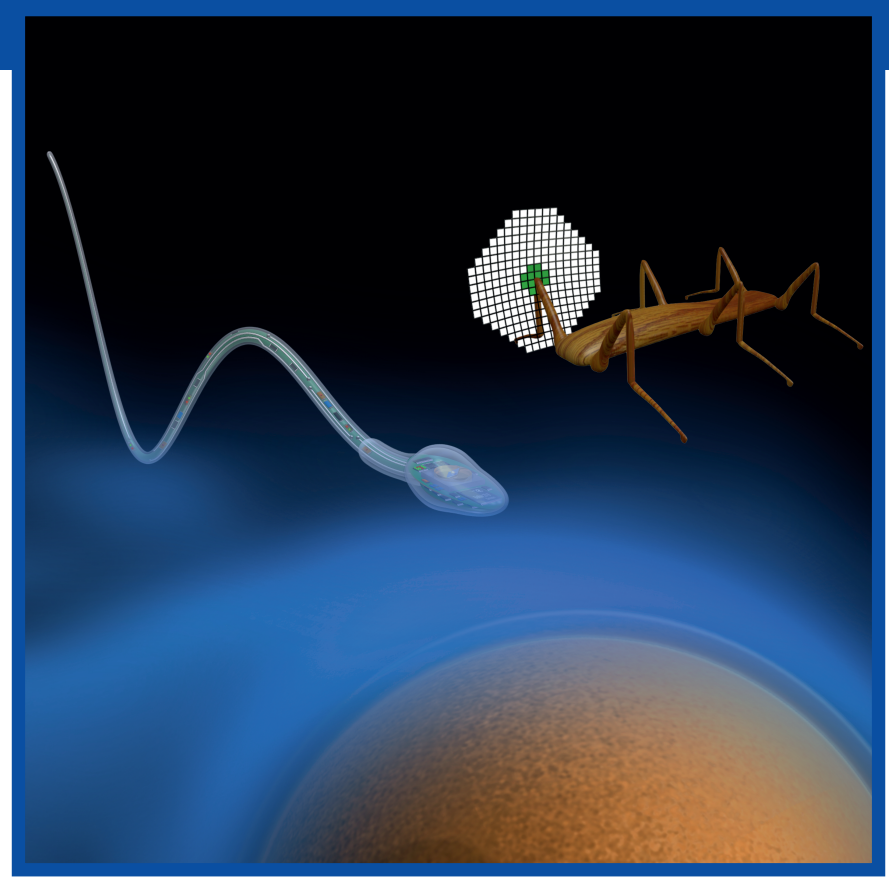
MAX-PLANCK-GESELLSCHAFT

mpipks

Principles of Biological and Robotic Navigation

Max Planck Institute for the Physics of Complex Systems

Focus Workshop
29 – 31 August 2016



Cells, organisms, and man-made robots use sensory information to navigate in complex environments. What are the underlying navigation strategies and control circuits? This interdisciplinary focus workshop will bring together biologists, physicists, and engineers interested in biological and bio-inspired motility control, and will address the principles that make navigation robust in the presence of noise and incomplete information.

Topics include

- Navigation strategies of cells and organisms
- Robots and autonomous motility control
- Chemotaxis, phototaxis, thermotaxis
- Information theory of navigation
- Sensori-motor feedbacks
- Fluctuations and theory of robust control
- Gradient sensing at the micron-scale
- Sensory adaptation and memory
- Spatial learning
- Steering in complex environments
- Game-theoretic trade-off choices
- Evolutionary adaptation

Invited speakers

Luis Alvarez (DE)
Nihat Ay (DE)
Eberhard Bodenschatz (DE)
Robert Endres (UK)
Fumiya Iida (UK)
Gáspár Jékely (DE)
Gerd Kempermann (DE)
Matthieu Louis (ES)
Peter Thomas (US)
Massimo Vergassola (US)
Barbara Webb (UK)

Scientific coordinators

Benjamin Friedrich
Dresden, Germany

U. Benjamin Kaupp
Bonn, Germany

Samuel Sánchez
Barcelona, Spain

Organisation

Mandy Lochar
MPIPKS

Applications received before 30 April 2016 are considered preferentially.

Applications are welcome and should be made by using the application form on the event's web page. The number of attendees is limited. The registration fee for the international focus workshop is 120 Euro and should be paid by all participants. Costs for accommodation and meals will be covered by the Max Planck Institute. Limited funding is available to partially cover travel expenses. Please note that childcare is available upon request.

For further information please contact:
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We also offer individual fellowships (phd, postdoc, sabbatical). Applications are accepted continuously. For details, please check www.pks.mpg.de/visitors