



ARIADNA NEWS

1st 2009 Ariadna Call for Proposals studies started

The Advanced Concepts Team has started to work on three different projects in cooperation with different European academic institutes:

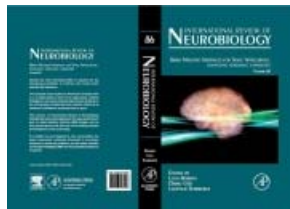
- Mapping the spacetime metric with a global navigation satellite system: University of Ljubljana
- Evolution in robotic islands: Enhancing the potential of automatic design techniques through a parallel distributed environment: University of Plymouth - School of Computing and Mathematics
- Path planning strategies inspired by swarm behaviour of plant root apices: New University of Lisbon (FFCT)

The Advanced Concepts Team thanks all the participants for their interest in this [Ariadna Call for Proposals](#).

ESA ACT NEWS

Publication of the book "Brain Machine Interfaces for Space Applications: Enhancing Astronaut Capabilities".

A workshop will take place on the 30th of November at ESTEC to discuss about the use of Brain Machine Interfaces to help astronauts. The workshop will be structured around this recent [publication](#) edited by Luca Rossini, Dario Izzo and Leopold Summerer.



Global Trajectory Optimisation Competition

The 4th [Global Trajectory Optimization Competition](#) Workshop took place on the 28th of September in Toulouse. The Moscow State University, winner of the competition, accepted to organize the next GTOC in October 2010. The final workshop will take place in February 2011 in Moscow.

Podcast on spider attachment for space applications

Spiders easily attach to smooth surfaces thanks to intramolecular forces acting between tiny hairs on their feet and the substrate, even in vacuum or under water. Tobias Seidl, ACT Research Fellow in Biomimetics, talks about this study which looks at the spiders' attachment devices and a transfer to space applications. [Listen to the podcast](#).

GENERAL ESA NEWS

Invitations to Tender (ITTs)

The European Space Agency periodically issues Invitations to Tender on a broad range of subject areas and activity types. A list of both upcoming and currently open ITTs can be accessed at [Emits](#).

UPCOMING CONFERENCES AND EVENTS

- [2nd International Colloquium - Scientific and Fundamental Aspects of the Galileo Programme](#), Padua, Italy, 14-16 October
- [Workshop on Methane on Mars: Current Observations, Interpretation and Future Plans, joint ESA-ASI workshop](#), Frascati, Italy, 25 - 27 November 2009

Make also sure you check out ESA's conference portal: <http://conferences.esa.int>

STAGE OPPORTUNITIES

The Advanced Concepts Team offers the following student placement opportunities in 2010:

- Machine learning for NEOs trajectories
- Constrained Global Optimization for Space Applications
- The motion of extended bodies in general relativity
- Trajectory around a binary asteroid in the extended FTBP
- Interplanetary transfers by crowdsourcing with online gamers

Please apply before 15 November.

Visit our webpages for more information on the [stage descriptions and procedure](#).

Other opportunities

Don't hesitate to tell us if you have other work opportunities you would like us to inform the Ariadna research community about.

ACT PERSONNEL

Three new colleagues have joined the [ACT](#) recently:

- Eduardo Martin Moraud from Spain, Young Graduate Trainee in Artificial Intelligence
- Juergen Leitner from Austria, Young Graduate Trainee working on Space Security
- Nicolas Weiss from Germany/Uruguay, returning stagiaire in Artificial Intelligence.

We also said farewell to Oisín Purcell, Young Graduate Trainee in Energy Systems, as well as 2 stagiaires, David Swords and Jussi Makitalo.

About the ACT: The aim of ESA's Advanced Concepts Team is to explore emerging technologies with potential applications in future space missions. This team collaborates on studies with academic research centres through the Ariadna scheme, specifically tailored to their needs.