Vacancy Notice

Internal Research Fellow (post-doc) in Mission Analysis

The European Space Agency's Advanced Concepts Team (www.esa.int/act) is looking for highly motivated young researchers in the field of Mission Analysis, with good analytical and communicational skills and an excellent aptitude for interdisciplinary teamwork.

The Team

The Advanced Concepts Team (ACT) is a group of research fellows (post-docs) and young graduates who originate from a broad variety of academic fields and aim at an academic career. Its task is to monitor, perform and foster research on advanced space systems, innovative concepts and working methods. It interacts externally almost exclusively with academia and operates as a truly interdisciplinary team bound to high scientific standards. Via its research, the team acts as a cross-departmental pathfinder to explore novel, potentially promising areas for ESA and the space sector, ranging from applied to basic fundamental research topics. The team is in constant evolution and attempts to lead and embrace changes and new trends. Each member is therefore encouraged and expected to contribute to and suggest changes to its research orientation and even internal functioning.

An important task of the team is to communicate scientific trends and results, as input to the strategic planning of the Agency.

The team has entered the field of mission analysis in 2002, with research projects related to automated interplanetary trajectory optimisation (see the GTOC competitions), asteroid deflection missions, efficient algorithms for dynamics and control (see the PyKEP project), swarm intelligence as a paradigm for formation flying, the use of vision to aid guidance and navigation, optimality principles in mission planning. Expertise in one or more of these areas is an asset. The candidate is encouraged to propose and initiate new research areas in the field of mission analysis based on her/his own research background and interest and in line with the objectives of the team.

The successful candidate will work in a team of scientists and engineers having diverse backgrounds ranging from physics to economy and will define and shape her/his research together with the team drawing from his or her own insight and analysis.

Duties and tasks

Successful candidates will carry out research in mission analysis and will, in particular, carry out the following tasks:

- Propose and perform high-level research in the field of mission analysis and design both within the team and together with universities of ESA member states (in particular through the Ariadna programme)
- Publish results in peer-reviewed publications and use modern communication tools to communicate with a broader community inside and outside ESA

- Lead and contribute to interdisciplinary research projects
- Monitor relevant science and technology trends (outside and inside the space sector), and provide summarizing reports both by own initiative and upon dedicated request
- Lead and assist interdisciplinary projects with other ACT Research Fellows and Young Graduate Trainees.
- Perform and participate in studies on subjects of strategic interest to provide in-house expertise to internal strategy development activities and the ESA General Studies Programme.
- Follow and monitor research in the area of mission analysis and in particular results of potential interest to ESA, the space sector and the team in order to derive and report strategic trends.

Areas of research are partly chosen by the successful candidate based on his/her own expert judgements and insight into trends and developments, partly chosen by the team as to follow strategic directions of the Agency.

Qualifications

The candidate should hold a degree in Aerospace Engineering. He or she should also have completed (or be about to complete) a PhD in Aerospace Engineering, subject of the thesis being relevant to the description of the tasks outlined above, and aim at an academic/research career. The candidate should demonstrate an interest to get actively involved in prospective interdisciplinary research.
Successful candidates are expected to show an aptitude to contextualise specialised areas of research and to quickly assess their potential with respect to other domains and applications. An avid, natural curiosity and a passion for new subjects and research areas are essential.

As member of an interdisciplinary, multicultural team of peers, the candidate should have a natural aptitude to teamwork, while being able to set-up, follow, monitor and be responsible for his/her own personal research plans and directions. An avid, natural curiosity and a passion for new subjects and research areas are essential. As member of an interdisciplinary, multicultural team of peers, the candidate should have a natural aptitude to teamwork, while being able to set-up, follow, monitor and be responsible for his/her own personal research plans and directions. Good methodological and organisation skills are therefore a valuable asset.

Application

Information on the ESA Research Fellowship Programme and the application form are available at: www.esa.int/SPECIALS/Careers_at_ESA/SEM19DXO4HD_0.html.
Applicants should send their CV, a covering letter stating their research interests and the filled-out RF application form to: act@esa.int as well as temp.htr@esa.int. (if not possible by email, the reference letters can also be sent via normal mail to: ESTEC HR Division, HFI-HTR, ESA/ESTEC; Keplerlaan 1, PO Box 299, 2200AG Noordwijk ZH, The Netherlands).
The general eligibility criteria of the ESA Research (Internal) Fellowship Programme apply.

All applications will be considered until the available post is filled. A first round of interviews is expected to take place in January/February 2012, with the option of

screening interviews via videoconference; to enter this call it is recommended to submit applications no later than **December 18**, 2011.
Interested candidates are highly encouraged to visit the teams website: www.esa.int/act as well as: www.esa.int.