

ACT Research Fellow on Mission Analysis and Trajectory Design

(posted: 12/06/2003)

The European Space Agency's Advanced concepts Team (ACT) is currently looking for highly motivated young researchers, with good analytical and communication skills and excellent aptitude for team work.

Successful candidates for this position will carry out research in the Mission Analysis and Trajectory Design area at ESTEC for a maximum of 2 years and will in particular perform the following tasks:

- Analyse, define and test innovative tools for mission design
- Investigate and assess innovative methodologies for mission analysis and design
- Participate, with the rest of the team, in the assessment of proposed space system concepts (these not being restricted only to the MA&TD field) and propose new concepts and assessment studies.
- Provide consultancy and support specific activities in the Concurrent Design Facility (CDF) at ESTEC and for other ESA activities when this is required.

The candidate should hold a degree in Aerospace Engineering, Physics, or Mathematics. He or she should also have completed (or be about to complete) a PhD in Aerospace Engineering, Physics, or Mathematics, the subject of the thesis being relevant to the description of the tasks outlined above, and in particular in one of the following areas

- Celestial mechanics
- Dynamic systems
- Astrodynamics
- Space flight mechanics
- Mission Analysis and Design
- Trajectory design and optimisation

The candidate is also expected to be familiar with:

- Trajectory design methods, among them in particular: direct and indirect approaches, optimal control theory, nonlinear programming, transcription techniques
- Methods for astrodynamics and space flight mechanics
- Design of space missions characterised by advanced propulsion systems as well as conventional chemical propulsion

In addition a basic knowledge of global optimisation methods and operational research is expected to enable the investigation of potential new tools for trajectory design and mission analysis.

Programming skills in Fortran (77 or 90), C++ and Matlab are also an asset.

Having good links with universities and research institutes and a strong interest in space science and / or technology are also essential requirements.

The general conditions of eligibility of the ESA Research (Internal) Fellowship Program should be fulfilled; these can be found at <http://www.esa.int/hr/educational/fellow.htm>

Applicants should send their CVs and covering letter, stating their research interests to: act@esa.int

Deadline for application submission is **01/09/2003**. However please note that **applications will be given consideration until the position is filled**, so early applications are encouraged.