



**TWO ESR (Early Stage Researcher) POSITIONS**  
**at the Department of Mathematics**  
**UNIVERSITY OF ROME TOR VERGATA (Italy)**

As part of the Marie Curie Initial Training Network, STARDUST-R, the Department of Mathematics of the University of Rome Tor Vergata offers 2 fully funded ESR positions on the following subjects:

- 1) *Dynamics of space debris within different orbital elements regions;*
- 2) *Proper elements for Space Debris.*

More information are available at: <http://www.stardust-network.eu/about/jobs/>

**MSCA ELIGIBILITY CRITERION:** At the time of appointment applicants should have no more than 4 years experience after graduation and should not have resided in Italy for more than 12 months in the last 3 years immediately before the appointment.

**REQUIREMENTS:** All qualified candidates irrespective of gender or nationality are welcome to apply as long as the following conditions have been fulfilled:

- A successful candidate must hold (or expect to obtain) a Master degree in Mathematics, Physics, Astronomy, Astrophysics, Engineering or Computer Science
- Knowledge of a computer language or algebraic manipulator (C, Fortran, MATLAB, Mathematica) is desirable
- A successful candidate should have good oral and written communication skills in English

**APPLICATIONS:** Interested applicants should send by e-mail ([celletti@mat.uniroma2.it](mailto:celletti@mat.uniroma2.it) as well as to [info@stardust-network.eu](mailto:info@stardust-network.eu)) the following documents:

- a) curriculum vitae (CV) following the template available at <http://www.stardust-network.eu/about/jobs/> ;
- b) transcripts and certificates;
- c) two letters of reference to be sent to [celletti@mat.uniroma2.it](mailto:celletti@mat.uniroma2.it);
- d) cover letter explaining their motivation, research interests and the ranked preference for posts.

**APPLICATION DEADLINE:** 31.03.2019

**ENVISAGED JOB STARTING DATE :** October 2019

**BENEFITS:** The selected ESR will be recruited on a fixed term staff contract with salary, having the opportunity to be enrolled in a doctoral program at the University of Rome Tor Vergata.

**OPEN FOR INTERNATIONAL ESR:** Yes

**SELECTION:** The selection will be on the basis of the CV and an interview (possibly via skype); the committee might decide to propose a research project as an exercise to be performed within a limited amount of time. Shortlisted candidates will be informed.

CONTACT INFORMATION: Prof. Alessandra Celletti ([celletti@mat.uniroma2.it](mailto:celletti@mat.uniroma2.it)) or [info@stardust-network.eu](mailto:info@stardust-network.eu)

**JOB DESCRIPTION:**

a) Research:

ESR-UTV1: Analysis of lunisolar resonances, including the effect of solar radiation pressure; investigation of highly eccentric objects (HEO), which might be affected by conservative and dissipative forces along their orbits, according to the altitude as the eccentricity varies; study of highly inclined objects.

ESR-UTV2: characterization of the populations of space debris by using techniques of perturbation theory (normal forms); study how orbit determination uncertainty propagates for control and mitigation of space debris; implement perturbation theory to extend, to the fully non-linear regime, linear variational methods currently used for determination of the growth in time of separation between nearby orbits.

b) Training: Attendance of schools and training events; Participate in planned secondments; Collaboration with other ESRs through the Working Groups,

c) Outreach activities: i) Communication - to communicate through multiple social media platforms; ii) Public Awareness - to participate in the campaigns managed by the Stardust-R network; iii) Education Outreach - to collaborate and engage directly with schools to inspire pupils to take Science, Technology, Engineering and Mathematics subjects to a higher education level.