Sapienza University, Department of Information Engineering, Electronics and Telecommunications, is looking for two 1-year post-doc positions (renewable positions). The hiring process goes through a public selection procedure. Competitive salary, based in Rome.
The research aims at supporting the development of future ***space missions*** for passive and active observation of the Earth using microwave sensors and systems.

Research Title 1

Retrieval of bio-geophysical variables from active and passive remote sensing data.

The research targets the retrieval and approximation of bio-geophysical variables of the scattering from natural surface, with a special focus on land and forests (considering both bistatic and monostatic approaches)). The system performance and the relevant background theoretical aspects (e.g., propagation, antenna theory, signal processing, approximation theory, neural networks) will also be considered.

The research is connected to data exploitation of current and future space missions for the observation of the Earth surface, also in collaboration with the European Space Agency.

At least one of the following aspects will be considered:

- Use of Artificial intelligence to enhance remote sensing data
- Use of approximation theory to enhance GNSS-Reflectometry data
- Study of the covariance matrix of the scattering
- Analysis of the role of the coherence of the scattering

The system performance and the relevant background theoretical aspects (e.g., propagation, antenna theory, signal processing) will also be considered.

The research is connected to the design of future *space missions* for the observation of the Earth surface, also in collaboration with the *European Space Agency*.

Research Title 2

Study and Design of Next-Generation Space missions

The research will be focused on the study of the system performance and of the relevant background theoretical aspects (e.g., scattering, propagation, antenna theory, signal processing), about the design of future *space missions for* the passive and active observation of the Earth surface and of the Earth atmosphere, at microwave and millimeter waves.

At least one of the following aspects will be considered:

- Study and modeling of the receiver chain of a polarimetric microwave radiometer
- Data-driven estimation of undesired effects
- Sensitivity study and data inversion for the estimation of the geo-physical parameter of interest

Requirements

PhD in either Aerospace Engineering, or Telecommunication Engineering, or Remote Sensing Engineering, or Electronics Engineering, or Mathematics, or Physics, or related disciplines. *Candidates at their final stage of a PhD course are encouraged to apply.*

- Knowledge of MatLab and/or Python is important.
  Background in the field of electromagnetic theory and/or radar theory and/or experience with signal processing and/or antenna theory and/or microwave theory are strong plus. Background in mathematics and/or physics are also considered and appreciated.
- Very good written and oral communication skills in English.
- Ability to work both independently and collaboratively within a team

Please get in touch for further information: davide.comite@uniroma1.it.
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