

PhD: Cloud-Aerosols Interactions

Faculty/department Electrical Engineering, Mathematics and Computer Science
Level Master degree
Maximum employment Maximum of 38 hours per week (1 FTE)
Duration of contract 4 years
Salary scale €2042 to €2612 per month gross
Starting Date To be agreed with candidate

Electrical Engineering, Mathematics and Computer Science

The Faculty of Electrical Engineering, Mathematics and Computer Science (EEMCS) is known worldwide for its high academic quality and the social relevance of its research programmes. The faculty's excellent facilities accentuate its international position in teaching and research. The faculty offers an interdisciplinary setting for its 500 employees, 350 PhD students and 1700 undergraduates. Together they work on a broad range of technical innovations in the fields of sustainable energy, telecommunications, microelectronics, embedded systems, computer and software engineering, interactive multimedia and applied mathematics. EEMCS: Your Connection to the Future.

The Remote Sensing of the Environment (RSE) section focuses on the development of new techniques for the observation of natural phenomena (atmospheric) and manmade objects. The group is specialised in the retrieval of microphysical and dynamical characteristics of the cloud system using ground-based and satellite measurements. Several research activities within our group are carried out in collaboration with various Dutch (KNMI, WUR, CESAR) and international institutes (IfT, CNR) in order to foster multi-atmospheric sensor developments and synergies as well as to improve retrieval algorithm techniques. You can find more information at the section's website: <http://rse.ewi.tudelft.nl>.

Job description

This PhD position is part of the European ACTRIS (Aerosols, Clouds, and Trace gases Research InfraStructure Network) project, aimed at integrating European ground-based stations equipped with advanced atmospheric probing instrumentation for aerosols, clouds, and short-lived gas-phase species. ACTRIS will have the crucial role of supporting new knowledge and policy related to climate change, air quality, and long-range transport of pollutants.

The PhD project aims to develop the experimental means to quantify the indirect effects of aerosols. Although these effects are conceptually understood, their quantification has proven to be difficult as the impact of cloud-aerosol interaction is often cluttered by concurrent atmospheric processes, and the technological means to unravel those do not yet exist.

The candidate will investigate the interactions between clouds and aerosols and their impact on radiation using the latest remote sensing technology and atmospheric/weather models. A full description of the cloud-aerosol interaction will only be achieved by using passive and active sensors hosted on different platforms (ground, airplane, satellite) in synergy, either combining active sensors at different wavelengths or augmenting the active sensors with passive radiometric measurements. The candidate will ultimately develop an observational framework for cloud-aerosol interactions.

Requirements

Applicants should have an MSc degree (or equivalent qualifications) with a background in electrical engineering and/or physics and a strong interest in meteorology and climate change. The candidate should have knowledge or interest in remote sensing of the atmosphere using ground-based and/or space borne sensors. Experience with numerical methods, analyses and visualization software is highly desirable.

The candidate should have an open personality and good English language skills in order to cooperate closely with colleagues, students and ACTRIS project partners as well as write project documents.

Conditions of employment

The successful candidate will be employed full-time by TU Delft for a fixed period of 4 years within which he or she is expected to write a dissertation leading to a doctoral degree (PhD thesis). The starting salary for a PhD is €2042 gross per month increasing to a maximum of €2612 gross per month in the fourth year.

TU Delft offers an attractive benefits package, including a flexible work week, free high-speed Internet access from home (with a contract of two years or longer), and the option of assembling a customised compensation and benefits package (the 'IKA'). Salary and benefits are in accordance with the Collective Labour Agreement for Dutch Universities.

Information and application

For more information about this position, please contact Prof.dr.ir. H.W.J. Russchenberg, phone: +31 (0)15-2786292, e-mail: H.W.J.Russchenberg@tudelft.nl. To apply, please e-mail a detailed CV along with a letter of application by 9 September 2011 to Mrs. A.C.M. Hoek, peno-ewi@tudelft.nl.

When applying for this position, please refer to vacancy number EWI2011-10.