

## **Netherlands: Two vacancies voor PhD Students on Computational Modelling of Lightning**

Centrum Wiskunde and Informatica (CWI) in Amsterdam has two vacancies in the Multiscale Dynamics group for talented

### **PhD students**

on computational modelling of lightning

### **Job description**

You will have the opportunity to advance our understanding of lightning dynamics through physical modelling and computational science. Central questions for the PhD projects include: When and how do electric discharges grow until they finally form the visible lightning channel? Why do negative discharges propagate in steps and positive ones continuously? How much can electrons be accelerated at the tips of growing lightning channels, and can this mechanism explain terrestrial gamma-ray flashes emitted by thunderstorms?

You will extend current computational models and analytical approximations of pulsed electrical discharges, and you will apply them to thunderstorm phenomena within an international and interdisciplinary network of collaborators. The research group "Multiscale Dynamics" lead by Ute Ebert has a proven track record in physical and computational modeling of such discharges that develop on multiple scales of space, time and energy. Current projects of the group address problems in thunderstorm research, plasma technology and high voltage engineering, allowing for cross-fertilization between these disciplines. Our computational codes set the state of the art in these fields, and you will have the chance to develop and evaluate them not only for internal use in the group, but also for European and international partners.

The two PhD positions are part of the European Innovative Training Network "*Science And INnovation with Thunderstorms*" (SAINT) with 15 PhD students. The network consists of four work packages: lightning measurements from the international space station (4 students), lightning observations from ground (4 students), lightning modelling (4 students) and lightning related experiments and technology (3 students). The work on lightning modelling will be coordinated by the CWI group. Collaboration within the network is strongly encouraged. Training and collaboration will be facilitated through one summer and one winter school per year.

Requirements:

We are looking for two highly motivated and talented students with strong interest in computational science and physical modeling, and open to collaborate with colleagues from other disciplines. The PhD candidates are required to have a Master degree in computational science, (applied) physics, (applied) mathematics, or a related field. Candidates are expected to have a very good command of English, and good academic writing and presentation skills.

To support mobility within and towards Europe, the candidates must not have been living in The Netherlands for more than 12 months in the 3 years prior to the contract.

Terms and conditions:

We offer a fulltime employment as a PhD student for 4 years. The appointment is initially for 18 months. **After the first year, we will evaluate whether we expect that a PhD thesis can be completed successfully.** If this is the case, the contract will be extended to 4 years. The contracts can start at any time between March 1 and December 1, 2017, but an early start is preferred.

The terms of employment are in accordance with the Dutch Collective Labour Agreement for Research Centres ("CAO-onderzoeksinstituten"). The fellows to be recruited by CWI will be employed with full social security coverage and all benefits in accordance with the Marie Skłodowska-Curie ITN fellowship regulations of the European Union (highly competitive salary and mobility allowance, plus family allowance, if applicable).

CWI offers attractive working conditions, including flexible working times and help with housing for expat employees.

Please visit our website for more information about our terms of employment:

[www.cwi.nl/terms-of-employment](http://www.cwi.nl/terms-of-employment)

Application & Information:

Applications must be sent before Monday, January 30, 2017 to [apply@cwj.nl](mailto:apply@cwj.nl). All applications should include

- your CV,
- a brief motivation letter (max. 1 page),
- a list of your MSc courses with grades,
- scientific publications and Master thesis (if already available) or otherwise the Bachelor thesis and a summary of the Master thesis, and
- the names, e-mail addresses and phone numbers of at least one scientist able and willing to provide references.

For residents outside the EER-area, a TOEFL English language test might be required.

For more information about the vacancy, please contact prof. Ute Ebert, email [Ute.Ebert@cwj.nl](mailto:Ute.Ebert@cwj.nl).

For more information about CWI, please visit [www.cwj.nl](http://www.cwj.nl) or watch our video “ [A Fundamental Difference](#) ” about working at CWI.

**Tentative Submission Deadline : 31 January 2017**

[Further Information](#)