Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,500 employees in one of Europe's biggest research centres and help us to shape change!

The Global Monitoring Group in the Institute of Climate and Energy Systems - Troposphere (ICE-3) with expertise in aircraft-based trace gas, clouds and aerosol measurements is joining the Collaborative Research Centre TPChange, as funded by the German Research Foundation, for studying the tropopause region in a changing atmosphere.

The TPChange project aims to specify the impact of the processes in the upper troposphere and lower stratosphere on composition, dynamics and ultimately on future climate and climate variability using a combination of field measurements, laboratory studies, theoretical approaches, and multiscale numerical modelling.

Further information on the project is available at: DFG CRC TPChange https://tpchange.de/

We are looking to recruit a

PhD position - Understanding the Transport of Aerosol Particles in the Upper Troposphere and Lower Stratosphere and Their Interaction with Ice Clouds

Your Job:
Aerosol particles act as ice nucleating particles, providing surface for water vapour to deposit and freeze into ice particles. Formation of cirrus clouds and subsequent sedimentation of ice crystals can dehydrate air in the upper troposphere and lower stratosphere (UTLS) region, thereby influencing the water vapor budget of this region. Aerosols and cirrus are important to the global climate because they interact with radiation from the sun and from the earth. However, the aerosol-cirrus interaction in the

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our **Online-Recruitment-System!**

Questions about the vacancy?
Get in touch with us by using **our contact form.**
Please note that for technical reasons we cannot accept applications via email.
www.fz-juelich.de

UTLS is not well understood because of lacking sufficient in situ data. In addition, the dynamics and transport processes across the UTLS adds complexity to unveil the role of UTLS aerosols in cirrus formation and the life cycle of cirrus. Therefore, it is crucial to measure aerosol composition and properties together with cirrus occurrences in the UTLS for achieving a better understanding of the link between aerosols and cirrus clouds in the UTLS, for which Lagrangian modelling is a valuable tool to revealing the source of UTLS aerosols, the origin of water masses, and formation processes of cirrus particles.

Your key responsibilities include:

- Preparation, operation, and calibration of aerosol, water vapour and cloud instruments through the research aircraft campaign
- Flight planning for aerosol and cirrus measurement missions using Lagrangian modelling
- Evaluation and interpretation of in-situ measurement data aided by Lagrangian trajectory calculations
- Presentation of results in international conferences and publication in peer-reviewed journals

Your Profile:

The following requirements are for the ideal candidate:

- Master's degree in meteorology, physics, environmental science or similar
- Knowledge of atmospheric dynamics and chemistry would be an advantage
- Good experimental skills and interest in working with custom-built or modified instruments
- Solid programming skills (e.g. Python) are desirable
- Ability to work independently and self-reliantly, while maintaining strong teamwork and collaboration skills
- Fluent in English

Please feel free to apply for the position even if you do not have all the required skills and knowledge. We may be able to teach you missing skills during your induction.

Our Offer:

We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We offer ideal conditions for you to complete your doctoral degree:

- A cutting-edge topic in a highly relevant research field addressing the major uncertainties associated with ice clouds in climate prediction
- An exciting, interdisciplinary research environment within the Collaborative Research Centre TPChange program funded by the German Research Foundation and the European Research Infrastructure IAGOS
- Opportunities to attend conferences abroad and visit internationally renowned scientific groups
- Membership in the HiTEC Graduate School and the TPChange PhD program, providing additional scientific and professional training, international networking, and exchange opportunities
- Comprehensive training courses and individual opportunities for developing soft skills
- Targeted services for international employees, e.g. through our International Advisory Service
- 30 days of annual leave
- A large research campus with green spaces, offering the best possible means for networking with colleagues and pursuing sports alongside work

- Further development of your personal strengths, e.g. through an extensive range of training courses; a structured program of continuing education and networking opportunities specifically for doctoral researchers via JuDocS, the Jülich Center for Doctoral Researchers and Supervisors: https://www.fz-juelich.de/en/judocs

The project has a duration until June 2029 and therefore the position is initially limited until 30.06.2029. Further information on the project is available at: DFG CRC TPChange https://tpchange.de/

Pay is in line with 75% of pay group 13 of the Collective Agreement for the Public Service (TVöD-Bund) and additionally 60 % of a monthly salary as special payment („Christmas bonus“). The monthly salaries in euro can be found on the BMI website: https://go.fzj.de/bmi.tvoed.entgelt Further information on doctoral degrees at Forschungszentrum Jülich (including its various branch offices) is available at https://www.fz-juelich.de/en/careers/phd

We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us. The following links provide further information on diversity and equal opportunities: https://go.fzj.de/equality and on specific support options for women: https://go.fzj.de/womens-job-journey