



UNIVERSITY  
OF COLOGNE

Faculty of Mathematics and Natural Sciences

## Doctoral position on energy transfers across scales in convective storms (f/m/x)

### Institute of Geophysics and Meteorology

We are one of the largest and oldest universities in Europe and one of the most important employers in our region. Our broad range of subjects, the dynamic development of our main research areas and our central location in Cologne make us attractive for students and researchers from around the world. We offer a wide range of career opportunities in science, technology, and administration.

The position is based at the Institute for Geophysics and Meteorology and focuses on diagnosing energy transfers across spatial scales in convective systems. The goal is to better understand the physical mechanisms that drive storm development and intensification.

#### YOUR TASKS

- » Conduct numerical simulations of convective storms
- » Apply energy transfer diagnostics to the simulation outputs
- » Characterize the vertical and horizontal redistribution of energy within the planetary boundary layer throughout the life cycle of convective storms
- » Investigate the spatial organization and temporal evolution of inertial (mechanical) and diabatic (thermodynamical) energy transfers, especially in relation to changes in the dynamic environment or variation in storm intensity
- » Identify early indicators of storm intensification
- » Contribute to teaching activities
- » Present results at conferences and publish in scientific journals

#### YOUR PROFILE

- » M.Sc. in Meteorology, Atmospheric Sciences, Physics, Applied Mathematics, or a related field
- » Experience in atmospheric modelling or atmospheric data analysis; knowledge of boundary-layer meteorology or atmospheric convection is an advantage
- » Proficiency in scientific programming (eg. Python, Fortran/C++, HPC)
- » Experience with ICON simulations or Large Eddy Simulations is desirable but not mandatory
- » Excellent communication skills in written and spoken English

#### WE OFFER

- » The opportunity to be part of a dynamic research institute with strong international collaborations focused on studying extreme storms
- » A diverse working environment with equal opportunities
- » Support in balancing work and family life
- » Flexible working time models
- » Extensive advanced training opportunities
- » Occupational health management offers
- » Opportunity to work remotely

The University of Cologne promotes equal opportunities and diversity. Women will be considered preferentially in accordance with the Equal Opportunities Act of North Rhine-Westphalia (Landesgleichstellungsgesetz – LGG NRW). We also expressly welcome applications from all suitable candidates regardless of their gender, nationality, ethnic and social origin, religion, disability, age, sexual orientation and identity.

The position is available immediately on a part-time basis (29,87 hours per week). The position is to be filled for a fixed term until 31 December 2028. If the applicant meets the relevant wage requirements and personal qualifications, the salary will be based on remuneration group 13 TV-L of the pay scale for the German public sector.

Please apply online with proof of the required qualifications without a photo under: <https://jobportal.uni-koeln.de>.

The reference number is Wiss2508-I5. The application deadline is 30 September 2025.

For further inquiries, please contact Professor Dr Nikki Vercauteren ([nikki.vercauteren@uni-koeln.de](mailto:nikki.vercauteren@uni-koeln.de)) and take a look at our [FAQs](#).



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