



The Professorship for **Environmental Sensing and Modeling** at the Faculty of Electrical Engineering and Information Technology is researching topics of metrology for environmental applications, and monitoring greenhouse gas and pollutant emissions using atmospheric measurements and inversion models. We are looking to expand our team **from September 2023** onwards:

Scientific Researcher (m/f/d) E13 TV-L Novel mathematical approaches for inverse modeling to determine greenhouse gas emissions

The position is initially limited to two years with the possibility of an extension.

TASKS:

- Mathematical modeling and development of inverse methods (e.g. Bayesian inversion, optimization based methods, sparsity promoting methods based on ℓ^1 -norm minimization and compressed sensing) to determine greenhouse gas and pollutant emissions in cities using atmospheric measurements (MUCCnet: atmosphere.ei.tum.de/) and in-situ sensor networks in ICOS Cities project (icos-cp.eu/projects/icos-cities)
- Design and implementation of suitable algorithms, using the High Performance Computing infrastructure at Leibniz Rechenzentrum (LRZ)
- Analysis of ground-based and satellite-based remote sensing data
- Presentation of your results on conferences and publications in scientific journals

REQUIREMENTS:

- An above-average degree in mathematics, computer science, information technology, electrical engineering, physics, mechanical engineering, or a comparable qualification
- Very good knowledge of mathematics, especially in linear algebra and numerical optimization
- Understanding of statistical modeling and inverse problems is desirable
- Experience with programming languages, e.g., C++, MATLAB, Python, Julia, R
- Joy in dealing with challenging and interdisciplinary questions
- Sound knowledge of written and spoken English. Basic German knowledge desired.

WE OFFER:

- Exciting research questions within a reputable ERC Consolidator Grant
- Possibility of earning a doctoral degree
- Access to an excellent international network and up-to-date research topics
- Opportunities to work with the top peers from Harvard University, NASA JPL, UC Berkeley, and other European partners, e.g. LSCE (France), EMPA (Switzerland)

INTERESTED?

We look forward to receiving your application documents (English or German); applications should include:

- Detailed CV, including previous publications if applicable
- 1 page research statement, describing research interests and goals
- A list of previously taken courses and grades
- Summary of master thesis (not more than one page)
- Names and email addresses of 2-3 academic references

Please send the application as a single PDF document via e-mail to esm@ei.tum.de, with "Application GHG Modeling" as the subject line. Applications will be reviewed until the position is filled. Further info about the research group: www.ee.cit.tum.de/esm. If you have any questions about the position, please contact us: esm@ei.tum.de.

As an equal opportunity and affirmative action employer, TUM explicitly encourages applications from women as well as from all others who would bring additional diversity dimensions to the university's research and teaching strategies. Preference will be given to candidates with disabilities who have essentially the same qualifications. As you apply for a position at the Technical University of Munich (TUM), you provide personal data. Please note our data protection information according to Art. 13 Data Protection Basic Regulation (DSGVO) on the collection and processing of personal data in connection with your application <http://go.tum.de/554159>. By submitting your application, you confirm that you have taken note of the data protection information of the TUM.

Technical University of Munich – Professorship for Environmental Sensing and Modeling
Theresienstraße 90, D 80333 Munich, Germany