



**Jobbnorge ID:** 275816

**Deadline:** 3/10/2025

**Website:** <https://www.met.no/>

**Scope:** Fulltime

**Duration:** Permanent

## Air pollution modelling: scientists, developer and PhD

### About the position

The Norwegian Meteorological Institute (MET Norway) has 4 new positions vacant in the field of air pollution modelling and scientific programming: 2 permanent positions, as well as 1 temporary position (3 years) that may become permanent depending on the qualifications of the applicants. In addition, a PhD position will be filled. If internal candidates are hired for the permanent positions, two additional temporary positions will become available. We are seeking candidates with a background in natural science, interest in air pollution and/or meteorology and experience in scientific programming. Experience with machine learning is an advantage.

Modelling of the formation and dispersion of air pollutants on a regional and global scale has been a central task for MET Norway for many years. For instance, MET Norway provides air pollution modelling work (the EMEP MSC-W model, [www.emep.int](http://www.emep.int)) that underpins the scientific review and revision of emission control targets within both the United Nations Air Convention and the EU National Emissions Ceilings Directive. MET Norway also delivers regional air quality forecasting in the CAMS service (<http://atmosphere.copernicus.eu/>). In recent years, a downscaling methodology that bridges the regional to urban scale, the uEMEP methodology, has been developed. This methodology has been used e.g. in work central to the revision of the Ambient Air Quality Directive. The operational local air quality forecasting for Norway (<https://luftkvalitet.miljodirektoratet.no/> and [yr.no](http://yr.no)) also applies the uEMEP methodology. Recently, machine learning approaches have been applied to weather forecasting at MET Norway with great success and we are aiming to try out similar approaches for the forecasting of air pollution.

### Main tasks and responsibilities

The following topics are relevant:

- **Air pollution model development and application.** Implement new physical processes related to chemistry, physics or meteorology. Extend the range of applications of the model, for instance include dynamic modelling of ultrafine particles. Improve the numerical schemes and performance of the code.
- **Scientific programming:** Evaluation of air pollution and climate models using observational data from satellites, lidars, surface measurements etc. He/she will contribute to development of tools/scripts (in Python) and participate in analyses and evaluation of air quality and climate model results.
- **Application of machine learning** in air pollution forecasting together with a team of researchers from different groups at MET Norway

For the **PhD position** we are seeking a candidate that is interested in developing and applying the European scale EMEP/uEMEP chemical transport model. Depending on competence and interests, he/she could work on e.g. ultrafine particles, emission inversion, regional-to-local downscaling or biosphere-atmosphere exchange processes.

### Qualifications

Computer skills are highly relevant, both for model development (Fortran 90) and for assessing high volumes of data, by extracting and presenting the relevant information (mostly Python). In addition, insight into the relevant physical and chemical processes is an advantage. The candidates should have the following qualifications:

- PhD or Master in the natural sciences, preferably atmospheric chemistry or meteorology, but physics, mathematics, chemistry or related fields can be relevant.
- Experience with numerical modelling and skills in scientific programming.
- Familiarity with UNIX/LINUX and python and - for the model development positions - preferably Fortran 90 or another low level language.
- Competence in one or more of the following fields is an advantage;
  - Physical/chemical processes relevant for air pollution modelling
  - High Performance Computing, parallelization (MPI) and optimization of model code
  - Application of machine learning to physical/chemical processes
  - Experience with project acquisition is an advantage

In addition, the candidates should have

- Good knowledge of the English language and good writing skills
- Good communication skills, both related to research and presentations in general
- Excellent grades from master and/or bachelor (if you are a young scientist)

### Personal skills

- Strong motivation and personal capabilities
- Creativity and ability to work result-oriented, accurately and structured.
- Analytical ability, ability to work independently as well as the ability to be a good team player
- Willingness to learn Norwegian

Personal suitability will be given great importance.

## We can offer

- Salary on the governmental salary scales as 1108/1109/1183 scientist, dependent on qualifications and experience, 1108 scientist NOK 513.100 - 575.400 , 1109 scientist NOK 575.400 - 750.000 pr. year and 1183 scientist NOK 750.000 - 850.000, higher salary can be negotiated in case the selected applicant has excellent qualifications

For employment in researcher code 1183, the appointed candidate must apply for personal promotion based on competence or already have been granted promotion in accordance with the Rules for Promotion to Researcher SKO 1183.

- Membership in the governmental pension scheme (2% deducted from gross salary)
- The first 6 months are a mutual trial period

## Diversity and positive discrimination

We believe that diversity is a strength, and want employees with different skills, subject combinations, work experience, gender, life experience and perspectives. We encourage all qualified candidates to apply for a job with us regardless of ethnic background, age or ability.

We practice positive discrimination, and will call at least one qualified applicant in each of these groups for an interview: applicants with a disability, immigrant background or gaps in the CV. To be considered in one or more of these categories, you must mark the appropriate category in your application.

Functional impairment: applicants who need accommodation in the workplace or in the working relationship.

Immigrant background: applicants who have themselves immigrated to Norway. Or who was born in Norway with two parents who both immigrated to Norway.

Gaps in CV: applicants who have had a break from work, education or training for a total of at least two years in the last five years due to e.g. physical or mental illness or injury, intoxication or punishment.

The ticks can be used for anonymised statistics or reporting purposes.

Publication of applicant lists for public sector positions is an important principle to ensure transparency. If you want your name to be excluded from the applicant list, you must ask for it yourself, and give us a reason. In order to be exempted from the public applicant list, your justification for exemption must outweigh the consideration of transparency in the applicant list. If your request is not accepted, you will have the opportunity to withdraw your application.

## The application

The application with CV and other attachments is sent electronically via Jobbnorge.no. Attach certificates and all pages of diplomas. The documents must be in Norwegian, a Scandinavian language or English. Translations must be authorized. Before any employment, we will check the documents. In the case of foreign education, we ask that you attach an explanation of the grading system.

## About us

The Norwegian Meteorological Institute warns the weather, monitors the climate and conducts socially critical research. We have provided critical meteorological services to Norwegian society for over 150 years. We ensure that rescue helicopters arrive safely, and that the emergency services are prepared for extreme weather and other dangerous weather. Our special services are used in the event of air pollution, oil spills, volcanic eruptions and nuclear accidents. Common to all our work is the main goal of securing lives and values. Every day, Yr.no is also part of the planning for people at home and abroad.

Modern meteorology requires the handling and analysis of enormous amounts of data, and offers great and exciting professional challenges.

We also have a research environment with around 140 researchers in weather, oceans, air quality and sump safety. We are today a leading international competence environment in warning and climate research with head office located in Oslo, and offices in Tromsø and Bergen. Among our partners you will find, among others, Avinor, BaneNor, the Norwegian Institute of Public Health, the Norwegian Directorate for Social Security and Emergency Preparedness (DSB), the Norwegian Armed Forces, the Norwegian Civil Aviation Authority and many more. You can read more about what we do at [strategi.met.no](http://strategi.met.no)

## Additional information

### Contact person:

Hilde Fagerli, Head of Division

Phone: +47 920 26 597 | E-mail: [hildef@met.no](mailto:hildef@met.no)

### Place of service:

Henrik Mohns Plass 1 0371 Oslo (Oslo Municipality)