

Chiba University Seeking a Specially Appointed Researcher at the Center for Environmental Remote Sensing

March 14, 2025

Environmental Prediction Science Laboratory

Center for Environmental Remote Sensing (CEReS), Chiba University

(<https://kotsuki-lab.com/>)

[Job Description]

The Center for Environmental Remote Sensing Research Center (CEReS), Chiba University, processes, archives, and publishes satellite data and related ground observation data, and is exploring a wide range of research fields on Earth Environmental Science. At this time, we are recruiting a specially-appointed researcher to implement research development on weather controllability through ensemble data assimilation and data-driven approaches.

1. Number of Applicants: 1

2. Position Summary:

The successful candidate will be able to contribute to education and research on data-driven weather forecasting through AI-based weather prediction and AI- and quantum machine-enhanced data assimilation. Doctoral degree at the time of hire or expected to obtain a doctoral degree in the near future.

3. Job Description:

Engage in education and research such as JSPS's Grants-in-Aid for Scientific Research Foundation (A) "Transforming Weather Prediction with Deep Learning and Quantum Computing" and develop data-driven weather forecasting system with AIs. Specifically, the following research-related tasks are considered, but the applicant's research background and skill may also be taken into consideration in setting research themes that can contribute to the project mission.

- (1) Development of AI weather forecasting models and latent space representation
- (2) Advancement of weather forecasting and data assimilation using quantum computers, including gate-based and annealing-based methods
- (3) Research on data assimilation, ensemble generation, and downscaling using diffusion models and generative AI

If you would like to know more about our research further, please contact Prof. Shunji Kotsuki below.

[Relevant Papers]

Takeshima, A., Shiraishi, K., Okazaki, A., Tussyuki, T., and Kotsuki, S.: Bridging Artificial Intelligence and Data Assimilation: The First Stable Ensemble Forecasting System, ClimaX-LETKF (submitted)

Kotsuki, S., Shiraishi, K. and Okazaki, A. (2024): Ensemble data assimilation to diagnose AI-based weather prediction model: A case with ClimaX version 0.3.1, arXiv

Kotsuki, S., Kawasaki, F. and Ohashi, M. (2024): Quantum data assimilation: a new approach to solving data assimilation on quantum annealers. Nonlin. Processes Geophys. Lett., 31, 237-245.

[Qualifications]

Those who are interested in research fields related to meteorological/hydrological models, data assimilation, machine learning, and quantum computing, and have research achievements in related fields. Applicants from fields other than earth science are also welcome (e.g., mathematics, information science, ecology, etc.) if you have an interest or motivation for such fields mentioned at the beginning.

[Related Research Fields]

Geoscience (Earth Science) including meteorology and hydrology, civil engineering, general environmental science, mathematics, and information science.

4. Hire Date: May-October 2025 **negotiable

5. Recruitment Period:

The contract is until the end of the Japanese school year, but it may be renewed depending on the progress of the work.

6. Employee Benefits:

(1) Job title: Specially-appointed researcher (full-time).

(2) Salary, etc.: University's Specified Employment Staff Salary Regulations based on your years of experience will be applied

(3) Working hours: from 8:30 to 17:15, 5 days a week, 7 hours and 45 minutes per day (under the Discretionary Labor System for Professional Work).

(4) Holidays: Saturdays, Sundays, National holidays, and year-end and New Year

holidays.

(5) **Leave:** granted based on the University's employment agreement.

(6) **Various allowances:** provide commuting allowance if requirements are met based on the regulations.

(7) **Insurance:** join a mutual aid association, employment insurance, and workers' accident compensation insurance

7. **Selection Process:** will be made based on application screening and interviews.

8. **Required documents:**

(1) Complete CV: any style or format is accepted. *Email address is required.

(2) List of research achievements: please list peer-reviewed treatises and others separately.

(3) Copy of 3 major publications: must be single author or first author treatise.

(4) Research history and plan after being hired: please fill out two letter-size papers for each topic including your available programming languages.

(5) Contact information of your former co-workers: list 1 or 2 people other than the Center for Environmental Remote Sensing, Chiba University. Any style or format is accepted.

9. **Deadline for this recruitment:**

Applications (required documents listed #8) must arrive by May 31, 2025. Please note that the deadline may change accordingly.

10. **Documents to be sent to:**

Shunji Kotsuki

Environmental Remote Sensing Research Center, Chiba University

1-33 Yayoi-cho, Inage-ku, Chiba-city, Chiba, Japan 263-8522

✚ Note "**Specially Appointed Researcher Application Documents Enclosed**" in red on the front of the envelop if sent by registered mail.

11. **Contacts:**

✚ **Job related:**

Shunji Kotsuki

Environmental Remote Sensing Research Center, Chiba University

Phone: 043-290-3861, e-mail: shunji.kotsuki@chiba-u.jp

✚ **Benefits related:**

Yuji Wakatsuki

Center Support Unit., Science and Engineering General Affairs Division, Nishi-Chiba District, Chiba University

Phone: 043-290-3832, e-mail: bee3832@office.chiba-u.jp

12. Notes:

-  Application documents will not be used for any other purposes than the selection process. These documents will not be returned unless a stamped self-addressed envelope is enclosed.
-  Travel expenses will not be paid for interviews during the selection process.
-  The salary will be determined in accordance with our university's specific employment salary regulations, based on years of experience. For the first year after obtaining a Ph.D. degree, the annual income is expected to be around 5 million yen.