# **Postdoc research position in data assimilation and remote sensing**

The Goddard Earth Sciences Technology and Research II (GESTAR II) consortium at NASA’s Goddard Space Flight Center (GSFC) invites applications for a postdoctoral research position in the fields of atmospheric science, earth science, machine learning, or related fields.

The Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission is an important pathfinder mission for aerosol data assimilation in the Global Modelling and Assimilation Office (GMAO) at NASA Goddard Space Flight Center (GSFC). The hyperspectral OCI instrument, as well as the two multi-angle polarimeters (HARP-2 and SPEX-One) that comprise PACE are significant enhancements in aerosol remote sensing capabilities that require new developments in the GEOS aerosol data assimilation system. The goal of this postdoctoral research position is to conduct theoretical research on the impact of PACE observations on GEOS aerosol forecasts. GMAO's proxy datasets of simulated observations of polarimeters and radiometers will be used to prototype a machine learning based aerosol retrieval algorithm suitable for aerosol data assimilation, which includes prognostic error prediction. The impacts of these data will be investigated with GEOS data assimilation experiments.

Responsibilities also include contributing to the publication of articles in peer-reviewed journals describing the research results and the contributing to writing proposals to support the research. This an early career position.

Required Qualifications:

• PhD in Atmospheric Sciences Earth Science, Computer Science, Physics, or related fields, experience in data assimilation and/or aerosol remote sensing is required

• Scientific programming experience in Fortran and/or C++ is required, as well as working knowledge of Python for computational science and machine learning.

Preferred Qualifications:

• Familiarly with aerosol models and their parameterizations is a plus.

• A demonstrated ability to contribute to team-focused developments of large, complex computational systems.

• Strong written and verbal communication skills.

• Ability to think critically and innovatively with an interest in interdisciplinary studies.

The successful candidate will join the GESTAR II Consortium which supports over 120 researchers based primarily at NASA Goddard Space Flight Center (GSFC). GESTAR II researchers work to create extensive opportunities for breakthroughs in earth and atmospheric science research, carrying out observational, experimental and theoretical research in support of NASA strategic Earth Science mission objectives.

Goddard’s Earth Science Division is home to about 200 civil servants and over 1200 collaborating researchers and support personnel, dedicated to studying the Earth as an integrated system that includes the atmosphere, oceans, biosphere, cryosphere, and geosphere. The Division operates as a component of the Sciences and Exploration Directorate that collaborate on interdisciplinary research with the Astrophysics Science, Heliophysics Science, and Solar System Exploration Divisions.

The nominal starting date is in mid- September, but alternate dates are possible depending on availability.

Candidates should provide a cover letter, CV (including publication list) and a 3-page statement of research interests. Short-listed candidates will be asked to supply three letters of reference at a later date. All materials and inquiries should be sent by email Subject line: Task 157: Researcher Position to: Daniel Laughlin ([daniel.laughlin@morgan.edu](mailto:daniel.laughlin@morgan.edu)).

Completed applications received by August 15, will receive full consideration, however the posting will remain open until the position is filled.

Salary and benefits are competitive, commensurate with experience and qualifications. The GESTAR II consortium and NASA/GSFC are committed to building a diverse research community and encourages applications from women, racial and ethnic minorities, individuals with disabilities and veterans. All GESTAR II institutions are Affirmative Action, Equal Opportunity Employers.

For more information about the proposed research, contact Dr. Patricia Castellanos (patricia.castellanos@nasa.gov).