



JOB OPENING: Postdoctoral Research Scientist in Computational/Theoretical Plasma Physics

The Space Science Institute (SSI) invites applications for a Postdoctoral Research Scientist to be based in either Los Angeles, CA or Auburn, AL. The selected candidate will take a leading role in research on the 3-D morphology of ultra low frequency (ULF) waves and associated ion distributions in the Earth's ion foreshock.

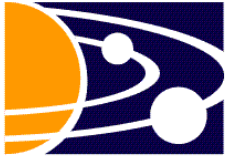
Foreshock ULF waves are generated when energetic ions reflected from the Earth's bow shock interact with the solar wind core population via one of several instability mechanisms; the goal of the project is to determine the influence of 3-D effects on the wave generation and evolution. The postdoctoral scientist will focus on analysis of state-of-the-art local and global hybrid simulations (ANGIE3D and Vlasiator) as well as computation of ULF wave growth rates using an arbitrary distribution function solver (LEOPARD). The selected candidate will work with SSI Research Scientist Dr. Seth Dorfman, who will be responsible for the observational aspects of the project. The postdoctoral scientist will also receive training from Dr. Yu Lin and Dr. Xueyi Wang at Auburn University in order to learn how to run the new ANGIE3D simulations required by the project. Team meetings will also include Dr. Vadim Roytershteyn (SSI) and Dr. Kun Zhang (UCLA). Results will aid our broader understanding of how waves generated by energetic particles behave in 3-D, which is of interest to present and future space missions.

For more information on the physics, see these related papers:

<http://dx.doi.org/10.1029/2023JA031724>

<http://dx.doi.org/10.1002/2017GL072692>

Knowledge/Education: A Ph.D. in space plasma physics or related fields is required prior to the start date of the position. Applicants should demonstrate the potential to publish research results in peer-reviewed high-quality journals, good communication skills, and the ability to work independently. No prior experience with ANGIE3D, Vlasiator, or LEOPARD is expected, but applicants should demonstrate skills that show they will be able to learn these tools quickly. Experience with computational data analysis and plasma physics theory is considered an advantage.



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The position is expected to start in mid 2025. As we are primarily interested in finding the right candidate for the position, the exact start date is flexible. The initial appointment will be for one year, renewable up to a total of two years contingent upon satisfactory performance and continued availability of funds. The position is open to applicants within the US and abroad. The selected candidate may choose to be based either in i) Los Angeles, CA where Dr. Dorfman is a researcher at UCLA or ii) Auburn, AL where Dr. Lin and Dr. Wang are employed by Auburn University. Opportunities therefore exist to interact with UCLA space physics (<https://epss.ucla.edu/research-areas/space-physics/>) and laboratory plasma physics (<https://plasma.physics.ucla.edu/>) groups as well as the Auburn space physics group (<https://www.auburn.edu/academic/cosam/departments/physics/research/space.htm>), including group meetings and seminars. The project is supported by a NASA Heliophysics Supporting Research grant awarded to SSI in 2025.

This is a full-time position with benefits. Benefits include health, dental, vision, and (after 1 year of service) 403(b) retirement plan. Position, salary, benefits, and travel budget for conferences are dependent upon continued availability of grant funding.

To Apply:

Send application materials to ssihr@spacescience.org and cc sethd at spacescience dot org with “Attn: Dr. Seth Dorfman” in the subject line.

Please include a curriculum vitae, cover letter, statement of previous research experience (max 2 pages), and contact details for 3 references. Interviews will be conducted via Zoom. Please submit an application by April 30, 2025 to ensure full consideration.

Contact Dr. Seth Dorfman with questions or to submit your CV for a preliminary evaluation: <https://www.spacescience.org/bio.php?emp=SDORFMAN>

Please note: The Space Science Institute is a non-profit, public benefit corporation and operates as an equal opportunity employer. This job description is general in nature and is not designed to contain or to be interpreted as a comprehensive inventory of all duties, responsibilities and qualifications of the position. More information about SSI can be found here: <http://www.spacescience.org/>