

**Astrophysical and Geophysical Flows
as Dynamical Systems
Program of Summer Study in Geophysical Fluid Dynamics
At the Woods Hole Oceanographic Institution
June 22 to August 28, 1998**

A ten-week summer study program in Geophysical Fluid Dynamics is held annually at the Woods Hole Oceanographic Institution, a private research and educational institution located 80 miles south of Boston on Cape Cod. Up to ten competitive fellowships are available for graduate or postdoctoral students.

The central theme of the 1998 GFD program is the application of dynamical systems techniques in astro- and geophysical flows. The techniques will be described in detail, and the successes to date in applying them to various problems will be explored. The complexity of fluid flows encountered in the astrophysical and geophysical sciences cannot be overstated. In most situations turbulence predominates, and often the problems of interest are complicated further by other physical effects such as rotation, stratification, magnetic fields and chemical and phase changes. Over the last decades, dynamical systems techniques have been fashioned and usefully applied to a variety of relatively simple systems. Attempts have also been made to apply these techniques to the much more complicated problems in astro- and geophysics. Yet how far can this kind of approach be taken? A major, provocative theme of the summer will be whether these techniques allow us anything more than a light, qualitative explanation of the phenomena we see.

The program will bring together researchers with backgrounds in theory, experimentation and observation, who will present a broad view of the current state of knowledge about these themes. The aim is to provide students and other interested researchers with an up-to-date review of the subject and exposure to applications in several disciplines in order to stimulate further research. A main component of the summer program will be a series of principal lectures on astrophysical and geophysical problems by Antonello Provenzale and tutorials on dynamical systems by Charles Tresser and John David Crawford. Fellows prepare notes summarizing the principal lectures and conduct research projects with the active support of the staff.

Successful applicants will receive stipends of \$3,900 and an allowance for travel expenses within the United States. Fellows are expected to be in residence for the full ten weeks of the program. The application deadline is February 14, 1998. Awards will be announced by April 1, 1998. We particularly encourage applications from women and members of underrepresented groups. Application forms may be obtained from:

Academic Programs Office, Clark Laboratory, MS #31
Fellowship Committee
Woods Hole Oceanographic Institution
360 Woods Hole Road Woods Hole, MA 02543-1541
Phone: (508)289-2219
Email: lcampbell@whoi.edu

FAX: (508) 457-2188

Prospective senior visitors, please contact Neil Balmforth, the Program Coordinator, by email at njb@hank.ucsd.edu

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