CENTER FOR TURBULENCE RESEARCH

Summer Research Opportunity

June 27 – July 23, 2010

http://ctr.stanford.edu

The Center for Turbulence Research invites applications for participation in its thirteenth biennial summer research program. The objective of the program is to promote development and evaluation of new ideas in turbulence research. It is expected that novel ideas and preliminary results generated during the summer program will be of sufficiently high caliber to lead to publications and to provide grounds for new research in the participants' home institutions.

Interested scientists may consider submitting proposals in general areas of turbulence research. Examples of areas currently under study at CTR are: structure of turbulent boundary layers, large eddy simulation (LES) of multi-phase flows, LES of convection in solar-type stars, wall boundary conditions and sub-filter modeling for high Reynolds number LES, aerodynamic noise and hydroacoustics, flow control and optimization, turbulent mixing, transition and turbulence in nonequilibrium hypersonic boundary layers, turbulent nonequilibrium hypersonic rough-wall boundary layers, turbulent coupled non-equilibrium/MHD/radiation flows, radiative transfer, error estimation and uncertainty quantification in numerical simulations, numerical algorithms for complex flows and for emerging computer architectures, and novel data mining techniques.

Participants will have the unique opportunity to make use of the Center's advanced numerical simulation technology including an unstructured code for multi-phase reacting flows in complex configurations. Computer expertise is not essential, and applications from experimentalists and theoreticians are encouraged. Scientific staff members and graduate students, highly skilled in computer programming and familiar with the Center's post-processing systems, will provide support. Faculty applicants may propose to have their own advanced doctoral students accompany them.

The available CTR databases include velocity, pressure, vorticity, and scalar fields in several compressible and incompressible flows. Three-dimensional fields at several instants and some time series are available for each flow. Several large-memory multi-processor systems, Linux HPC clusters ranging from 96 to 1,600 cores, numerous graphics workstations and a visualization system with a 16 tile display for 3-D data analysis will be available to the participants. Some participants in the recent past summer programs have used their own databases and codes. Although most of the summer program will be based on existing data, a few new cases suggested by the participants may be carried out in preparation for the summer program.

Approximately forty participants will be selected on the basis of their research ideas and the overall synergistic potential of the group. Fellowships will provide appropriate support, including travel and a stipend based on the full-time and concurrent salaries from the home institution. Potential applicants unfamiliar with the CTR summer programs and the format of the program and examples of research performed in should visit the CTR web site: http://ctr.stanford.edu.

Application Procedure:

Applicants should submit a brief proposal stating the fundamental questions to be addressed and/or the data and the computer codes to be employed, along with financial requirements; include a current vitae.

Applications must be received by January 15, 2010. Awards will be announced on March 1, 2010. Housing arrangements will be made thereafter.

Write to:

Center for Turbulence Research
Bldg. 500
Stanford University
Stanford, CA 94305-3035
Ph: (650) 736-0766
Fax: (650) 725-3525
bedin@stanford.edu

Please Post **Please Post** **Please Post**