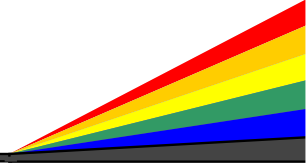


APS COLLOQUIUM SERIES



Speaker: **Dario Alfe**
 University College London

Dario Alfe received his Laurea in Fisica from the University of Trieste, Italy, in 1993. His experimental thesis was on "Adsorption of Oxygen on Rh." In 1993 he worked at ELETTRA, the newborn Synchrotron Light Source Trieste, and participated in the first demonstrative experiment. He received a Master in Physics in 1995 and in 1997 he received a PhD in Physics both at SISSA. He has had two Postdoctoral Research Assistant positions: 1997-1998 at the Keele University, U.K., working on iron and iron alloys under Earth's core conditions; and 1998 through 2000 at the University College London, U.K. Presently he is a Research fellow at Royal Society University.

Title: **"Thermodynamics from First Principles
Calculations: Temperature and
Composition of the Earth's Core"**

The temperature and composition of the Earth's core are two old unsolved problems in the Earth sciences, but essential to understanding the dynamics of our planet. This talk will present some new developments that allowed us to calculate from first principles the thermodynamical properties of iron and iron alloyed with some light elements. Using these results we have obtained the melting temperature of iron at core pressures and a close estimate of the temperature of the boundary between the liquid and the solid core. Thus we have been able to put significant constraints on the possible composition of the core.

Date: **Wednesday, September 5, 2001**

Time: **11:00 a.m.**

Location: **402 Auditorium**

Refreshments will be served at 10:45 a.m.