

**UNIVERSITY OF TEXAS AT DALLAS - DEPARTMENT OF PHYSICS**  
**PHYSICS COLLOQUIUM**

<http://www.utdallas.edu/dept/physics/colloquia1.htm>

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Wednesday, September 14, 2005; 4:00-5:00 PM  
Kusch Auditorium, FN 2.102

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**Electric Currents in the Earth's Space Environment**

**Professor Rod Heelis**

*Center for Space Sciences & Department of Physics, UTD*

The Earth's Space Environment is immersed in the interplanetary medium where the magnetic field of the Earth presents an obstacle to a magnetic field and charged particles from the Sun. The interaction between the interplanetary medium and the Earth is the source for electric currents that flow through the Earth's space environment. In addition internal forces on the charged particles in the Earth's space environment also drive currents that flow through the system. This talk will describe the large-scale current systems that create the envelope for the Earth's space environment and how they are related to electric fields in the system. We will also focus on two current systems of particular interest that affect the dynamics of the charged particles in the upper atmosphere.

**About the speaker:** Rod Heelis is the Cecil and Ida Green Honors Chair in Physics at the University of Texas at Dallas. He is also the Director of the Center for Space Sciences. He completed his graduate work at the University of Sheffield and came to UTD in 1973 as a Research Scientist. In 1989 he joined the faculty, became the Center director in 1994, and served as the Department chair from 2001 to 2003. He is presently the Principal Investigator for a NASA Explorer Mission of Opportunity entitled "Coupled Ion Neutral Dynamics Investigation" and has most recently served on the NASA Space Science Advisory Committee and the National Research Council Decadal Survey Committee.