

Physics Colloquium

Michigan Technological University

Thursday, November 19, 2008

4:00 - 5:00 pm

Room 139, Fisher Hall

Turbulent Heat Transfer in Dry and Moist Convection

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Abstract: Convective turbulence is a turbulent fluid motion which is driven by temperature differences. It is present inside stars and planets or in the atmosphere. It is also used in many technological applications such as air conditioning or chip cooling. The fundamental question of how much heat can be carried through a fluid in turbulent motion is addressed by supercomputer experiments on the basis of the underlying equations of motion. We will discuss two cases, “classical” dry and moist convection, i.e. convection with phase changes. The latter is responsible for the formation of clouds.

Biography: Dr. Schumacher received his PhD in Theoretical Physics from the Astrophysical Institute Potsdam in 1997. He was a Postdoctoral Fellow at Philipps University Marburg and Yale University. He is now a Heisenberg Professor of Theoretical Fluid Mechanics at Technical University of Ilmenau since 2005.