

# Physics Colloquium

## Michigan Technological University

Thursday, October 5, 2006, 4:00 to 5:00 pm  
Room 139, Fisher Hall

### **NEXTEX- Texas/U.P. Neutrino Mass Experiment**

Professor Manfred Fink  
Department of Physics,  
The University of Texas at Austin.

#### **Abstract**

Two convincing arguments exist as to the importance of determining the rest mass of the neutrino. First, the standard model predicts the mass to be zero mainly due to its one component helicity. Thus, our experiment is one of the many searches to go beyond the standard model. Second, there is little doubt today that the majority of the mass in the universe is non- luminous. Since the baryons contribute only at most 15% of the mass of the universe, this dark matter must be Weak Interacting Massive Particles (WIMPS). The only group of elementary particles which fit this description and is known today are neutrinos. If these leptons have mass, which can now be expected due to neutrino oscillation measurements, then we could find answers to many current astrophysical questions.

#### **Biography**



Prof. Manfred Fink received Ph.D. from University of Karlsruhe, Germany in 1966. He is a Professor of Physics at The University of Texas at Austin. Dr. Fink is a Fellow of American Physical Society and Humboldt Fellow. His research interest covers nearly all aspects of physics. He published more than 100 papers and several books on such diverse topics as electron scattering, laser spectroscopy, positron physics, ultra slow molecules and the physics of neutrino. Prof. Fink is one of the most popular lecturers at The University of Texas.