

# RESEARCH SEMINAR

## Numerical simulations of supercells and microbursts

**Dr Leigh Orf**

*Assistant Professor of Meteorology  
Central Michigan University, USA*

**10.30 – 11.30 am, Friday 9<sup>th</sup> February 2007**

**Boundary Layer Wind Tunnel Laboratory  
University of Western Ontario  
Room WT 130**

### ABSTRACT

The talk will present some of Dr Orf's latest modeling research into supercell thunderstorms and microbursts. The first part of his talk will address the logistical challenges of creating, analyzing, and visualizing storms whose computational domain spans on the order of 1 billion grid zones. Such large simulations are required in order to resolve tornado vortices in a domain large enough to capture the entire parent supercell and its surrounding environment. He will then present visualizations of a simulated tornadogenic supercell which contains Descending Reflectivity Cores (DRCs), features recently identified in radar reflectivity data which may offer clues into some modes of tornadogenesis. He will also present some recent high-resolution microburst modeling results from a collaborative study with UWO researchers. The focus of this work is the structure and evolution of damaging wind flow near the ground.

### **Biography:**

*Leigh Orf is an Assistant Professor of Meteorology at Central Michigan University in Mount Pleasant, MI. Leigh received his Ph.D. at the University of Wisconsin - Madison in 1997. Leigh held a faculty position at the University of North Carolina - Asheville from 2000-2003 and has been at Central Michigan University since 2003. His current research focus is very high-resolution 3D numerical simulations and visualization of convective phenomena such as supercell thunderstorms and microbursts.*