



NORTHEAST OHIO CHAPTER

AMERICAN METEOROLOGICAL SOCIETY

NEOCAMS Meeting Announcement

Please join us for our fall meeting of the Northeast Ohio Chapter of the American Meteorological Society (NEOCAMS).

Meeting Date/Time: Saturday, Oct 21, at 11:00 AM.

Location: McGilvrey Hall, Room 302, Kent State University.

Topic: Observed Characteristics of Land-Modified Lake-Effect Boundary Layers.

Speaker: Andrew VanLoocke, Ohio State University.

We are pleased to have an atmospheric science major from Ohio State address the group. Andrew is a senior at Ohio State and grew up in Ashtabula and has always had an interest in lake effect snow. Andrew wants to become a professor of Atmospheric Science.

One of the least understood aspects of lake effect snow is the modification of the atmosphere as it passes over upstream lakes and land. Andrew's study looked at the stability of the air and the identification of features that might influence stability and convection downstream. Andrew completed the study as part of a summer research project with David A. R. Kristovich of the Illinois State Water Survey, Champaign Illinois (see abstract below).

Also at the meeting we will discuss the forecast for the upcoming winter and will do our real time map discussion. We will discuss the Christmas get-together so bring your ideas on where to meet.

Directions to McGilvrey Hall: Downtown Kent and campus are near the intersection of Route 43 and Route 59. McGilvrey Hall is at the corner of South Lincoln and East Summit Street. From the south (and from I-76), take Route 43 four miles north into town and turn right onto East Summit Street by the CVS and Advance Auto Parts stores. From the north and Route 59, head south on Route 43 (called South Water Street in Kent) and make the first left at the light onto East Summit Street. On East Summit Street, turn left at the first light and park in the lot on your right. The parking lot is at the rear of the Duboise Bookstore and is usually free on the weekend. McGilvrey Hall is across the street from the bookstore. On line directions: <http://image.kent.edu/directions/kent/travel.asp>.

See you in October!

Jim Kosarik-President (440-886-0914), Ron Hahn-Vice President, Brian Shell-Secretary, Dick Vader-Treasurer.



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Observed Characteristics of Land-Modified Lake-Effect Boundary Layers

An undergraduate summer research project to be presented to the Northeast Ohio Chapter of the American Meteorological Society, October 21, 2006.

Author and presenter, Andrew D. VanLoocke.* Illinois State Water Survey Champaign Illinois;

Co-author David A.R. Kristovich Illinois State Water Survey Champaign Illinois

Abstract

Many years of work have led to a considerable improvement in our understanding of the way each of the Great Lakes modifies the atmosphere. However, lack of detailed information on how the air is modified *between* the lakes can lead to inaccurate estimates of the effects of multiple lakes. This may result in inaccurate forecasts of the modification of lake-effect boundary layers (LEBLs) over land areas.

Using a visible satellite classification scheme, forty-four cases appropriate for this study were identified from a six-year dataset. These specific cases entailed air modified by Lake Michigan traversing Michigan to reach the NOAA sounding station in Detroit (KDTX). Analyzing these sounding data revealed that the layer from the surface to 925hPa was stable for only 19 cases (34%). Furthermore, 0% of the cases were continuously stable throughout the LEBL. In addition, mesoscale surface analysis revealed that cases that did not develop surface stable layers exhibited west-to-east warming across land areas of Michigan. This indicated that the LEBL was not stabilized between the lakes. If the LEBL is not stabilized, it is likely that growth will be enhanced over downwind lakes. For those cases that did develop surface stable layer, mesoscale processes gave rise to surface cooling patterns. For these cases, specific series of atmospheric interactions were present and will be discussed in the presentation.

Identifying these features may be an integral step in assessing stable layer development and the influence it will have on convection downwind. In short, the ability to understand and predict the stability of an LEBL from an upwind western lake may be the difference between a good forecast and a great one for areas downwind of an eastern lake.

My name is Andy VanLoocke, I am a senior at The Ohio State University majoring in Geography with a specialization in Atmospheric Sciences. Having grown up in Ashtabula Ohio, lake-effect snow has always been an interest of mine. After seeing a presentation by Tom Niziol at the Ohio State Severe Weather Symposium, I approached him about an internship. Tom told me about Dave Kristovich, who became my advisor for my summer research project. I plan on attending graduate school, and eventually becoming a professor of Atmospheric Science.