ETL Hot Item submission for 30 November 2001

ETL's research from CALJET and PACJET used to help train NWS river forecasters

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Results of research from the CALJET and PACJET experiments of 1998 and 2001 respectively are being used in a formal COMET (*Cooperative program for Operational Meteorology, Education and Training*) Hydrometeorology training course for NWS (*National Weather Service*) river forecasters. This course is designed primarily for HPC *(Hydrometeorological Prediction Center*) and RFC (*River Forecast Center)* hydrologic-applications-support forecasters. The six-day course focuses on the quantitative precipitation estimation and forecast issues for time periods varying from six hours to several days. The course is part of a nationwide training effort conducted in Boulder, Colorado from 27 November to 4 December 2001 that includes forecasters from 13 offices around the nation (http://www.comet.ucar.edu/class/rfc_hydromet/03_Nov27_2001/html/map.htm).

Course organizers requested that we present a summary of our research into orographic precipitation processes and quantitative precipitation forecasting in land-falling west coast winter storms. Based on journal articles and other work in progress, the presentation will address the following topics:

Orographic precipitation enhancement (Neiman et al., 2002, *Mon Wea. Rev.*, accepted)
- rain rate is most strongly controlled by upslope winds at 1 km altitude, especially in a LLJ
- coastal rain is enhanced when coastal blocking forces convergence upstream of the coast

Bright-band detection (White et al., 2001, *J.Tech.*, in press, White et al., 2001 patent pending)
- an automated algorithm using wind profiler observations was developed and is being tested

Warm rain (White et al., 2002, in preparation for *J. Hydromet.*)
- rain rates in west coast storms can exceed 20 mm/h in conditions without a bright band

Sea-surface fluxes and coastal rainfall (Persson et al., 2002 in preparation)
- high surface winds combined with anomalously warm coastal SSTs can increase coastal rain

Flooding in adjacent watersheds
- small (± 10°) wind direction variations can strongly affect winter flooding in complex terrain

Narrow moisture plumes (Ralph et al., 2001, *Ninth Mesoscale Conf.*)
- Key aspects of a narrow moist plume responsible for a 4" rain event were missed by GOES and numerical models.

Participation in this training course represents a significant step in reaching our goal of linking research and operations within NOAA. The content of the presentation reflects our joint emphasis on pursuing basic research and developing direct forecasting applications for new technologies and concepts. In addition to the oral presentation, an electronic version provided to COMET will be a lasting resource for use by these and future students during and after the course.