

**GREATER ST. LOUIS CHAPTER
AMERICAN METEOROLOGICAL SOCIETY
MINUTES OF 21 NOVEMBER, 2002**

The first regular monthly meeting of the Greater St. Louis Chapter of the American Meteorological Society of the 2002-2003 season was held on 21 November at the Grappa Grill in St Charles County. \after a couple of months when speakers fell through, an active turnout of 25 members and guests were treated to an excellent off the menu dinner. In Jeff Hammond's and Jay Martinelli's absences, Ron Przybylinski was kind enough to host the meeting. At 8:25 Ron announced that our elected Chairperson, Jeff Hammond from Scott AFB would no longer be on site to fulfill his duties.

Reports

Lou read the minutes of the June meeting at KSD. They were approved as read. The new Treasurer, Danielle Minard, had just received the books and had no report.

Old Business

The first order of business was to announce the sudden death of Bill Jenner. He had been the Director of Training at Scott for 35 years. He is survived by his wife Jean of 56 years. His funeral and wake were announced for the Monday and Sunday following the meeting.

New Business

Future meeting and speakers were discussed. Dr. Rao mentioned the possibility of getting Joe Schaeffer or Bart Hagemeyer back as speakers. David Wilson proposed the new mid America airport in Illinois as a meeting site since the BAMEX forecast/operations center will be up and running then

Speaker

Ron introduced Phil Schumacher the SOO at the Sioux Falls, SD, Forecast Office. Phil graduated from the University of Wisconsin with his BS and MS in 1993 and stayed in the Midwest forecasting Severe Weather. In 1995 he moved to the SOO at Grand Forks before his present position. Phil's topic was how to include low resolution grids in Operational Forecasting. Less than 50 km is considered high resolution and very desirable by most forecasters.

He explained that the forecast is complicated by the overlapping of 4 physical scales: Planetary, Synoptic, Mesoscale, and Microscale (or Convective). Energy

flows from one to another. Using one scale alone forces assumptions that deny this interaction.

At the Synoptic scale we need to add the effects of shear, stability, and lift. This defines the mode of the event. Either isentropic lift or narrow bands, either bow echoes or supercells, either precip or no precip, or a cap or dissolution of the cap.

Focusing at the high resolution can detect the change of mode. Fronts, convective outflow, and clear or clouds can be lost at the synoptic scale. But Phil explained that deviations increase at high resolution. Noise can look like real events. Gradients are more realistic at lower grid resolutions. With just high resolution input, the mesoscale will corrupt the synoptic scale.

He showed the results before and after Dynamic simplification. Most researchers use the 40-90 km range for grid size that increases the signal to noise ratio. Phil introduced the use of QG theory which assumes geostrophic balance for waves of about 1000 km wavelength. Their properties exclude fronts, ageostrophic flow, and convection. It's incorporation gives stability and balance to the overall motions of smaller scale events. The 80 km grid can resolve waves in the 320-800 km range, nothing smaller.

He showed the results of a major snow bust in Sioux Falls, where the smaller scale model QPF missed a small area of heavy snow by 80 miles. By rerunning the case using a Q-Vector Convergence which uses the low resolution environment and high resolution mesoscale responses, the placement of the heavy snow was exactly correct.

The earlier misforecast warm front moved north where the convergence was focused.

His summary insisted on the need for both high resolution low level and low resolution upper air data carefully intertwined to give the best forecast. The Arch Desk pen set will be mailed to Phil. The meeting was adjourned at 9:45 P.M.

Louis Hull, Secretary