*Forecasting the weather
- ensemble techniques
in probabilistic weather prediction*

The application of surface high-resolution temperature forecast in southern Italy to forecast the flight of Lobesia Botrana

S. Federico (1,2), E. Avolio (1), L. Pasqualoni (2), C. Bellecci (2,3)

(1) ISAC-CNR, ISAC-CNR, Lamezia Terme (CZ), Italy (s.federico@isac.cnr.it, +0039 0968209150), (2) CRATI scrl, CRATI, Lamezia Terme (CZ), Italy , (3) University of Rome "Tor Vergata", Dept., Engineering Department

Since 2005, one-hour temperature forecasts for the Calabria region (southern Italy), modelled by the Regional Atmospheric Modeling System (RAMS), have been issued at CRATI/ISAC-CNR (Consortium for Research and Application of Innovative Technologies/Institute for Atmospheric and Climate Sciences of the National Research Council) and are available online at http://meteo.crati.it/previsioni.html (every six hours). Beginning in June 2008, the horizontal resolution was enhanced to 2.5 km.

This work shows the forecast performance out to three days for one climatological year (from 1 December 2008 to 30 November 2009, 365 run) for minimum, mean and maximum temperature. For this purpose, gridded high horizontal resolution forecasts of minimum, mean, and maximum temperatures are evaluated against gridded analyses at the same horizontal resolution (2.5 km).

Gridded analysis is based on Optimal Interpolation (OI) and uses the RAMS (Regional Atmospheric Modelling System) first-day temperature forecast as background field. Observations from 87 thermometers are used in the analysis system. The analysis error is introduced to define the forecast error unambiguously.

The surface temperature analysis/forecast is used to drive a simple degree-day model to simulate the European grapevine moth (*Lobesia Botrana*) occurrence of the maximum flight. The degree-day model, based on single-sine, uses temperature analyses until the current day, then the temperature forecast for the following three-days. Examples of model output and preliminary validation will be shown.