Verification of the MM5 forecast model during the occurrence of hurricane Vince for Mainland Portugal.

F. Santana (1,2), **G. Chagas** (1,2), L. Carvalheiro (2), P. Correia (2) and M. Orgaz (2)

(1) Meteorology Department, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil, (2) Physics Department, University of Aveiro, Aveiro, Portugal

(fernandasantana@meteoro.ufrj.br / Fax: +351 234-424965)

Nowadays numerical models are one of the main tools used to predict weather phenomenon on any meteorological scale (Correia, E., 2006). During recent times the scientific community has developed methods to quantify the uncertainty of weather forecast, and consequently improve this science, usually through the usage of statistical methods. This study has the objective to perform a quantitative verification in order to validate the forecast for mainland Portugal, by comparing the results of Mesoscale Model System (MM5) with data from surface stations. The analysis is conducted during the 5th and 20th of October, 2005, and during the 8th and 11th is observed the occurrence of hurricane Vince. Statistical methods were applied on this study, including correlation and error of the data, in order to evaluate the precision, tendency and skill of the forecast before, during and after an intense synoptic phenomenon. The verification indicated that the MM5 model had a consensus with the observed data regarding trajectory, precipitation and synoptic configuration associated with hurricane Vince. However, this model has the tendency to sub-estimate the surface wind intensity throughout the forecast.