



Regional model simulation of meteorological effects induced by the land use changes in the Abruzzo Region in the past twenty years. Preliminary results for different meteorological case studies.

B. Tomassetti (1), V. Colaiuda (1), M. Verdecchia (1,2), G. Visconti (1,2), G. Scarascia Mugnozza (3), P. Corona (3) and E. Pompei (4)

(1) Centro di Eccellenza CETEMPS, Università dell'Aquila, L'Aquila, Italy, (2) Dipartimento di Fisica, Università dell'Aquila, L'Aquila, Italy, (3) Dipartimento di Scienze dell'Ambiente Forestale, Università della Tuscia, Viterbo, Italy, (4) Corpo Forestale dello Stato - Italy (barbara.tomassetti@aquila.infn.it / Fax: +39 0862433033 / Phone: +39 0862 433046)

The vegetation cover changes over Abruzzo region in the Central Italy have been analyzed using two different set of aerial ortophotography for 1980 and 2002 respectively. MM5 limited area model has then been used to investigate the meteorological and climatic effects of land use change in the Abruzzo region induced by the observed land cover change in the last twenty years. The main changes of land use deal with a noticeable increase of forests and woods where crops and pastures were observed in the early 80s. In the first phase of this work, several different meteorological case studies have been simulated with MM5 model forced with two different land used scenarios. Results show a significant change in the rainfall spatial distribution while the differences for the circulation appear to be negligible and changes in the surface temperature are spatially limited; nevertheless, as also suggested by other authors, such local temperature changes are as large as those that result from the anthropogenic increase of greenhouse gases.