



## **Anthropic landuse cools down Europe**

M. Zampieri (1) and P. Lionello (2)

(1) CNR, ISAC, Lecce, Italy (m.zampieri@isac.cnr.it), (2) Salento University, Lecce, Italy

In this study we have coupled the potential natural vegetation VERDE to the regional climate model RegCM and implemented them in Central Europe and the Mediterranean region.

After a RegCM control simulation with observed landuse, we have used the coupled ReGCM-VERDE model for computing the potential natural vegetation distribution corresponding to the model climate.

Iterations are performed till climate and vegetation are in equilibrium.

The most important effect on climate has been found for summer in Central Europe, where the replacement of crops and farms with respect to the natural vegetation (broadleaved forest) produce 2K cooling.

A smaller cooling effect has been found also over Spain and Central Europe.

This effect is caused by the change of energy budget at the surface which is produced by the increased evapotranspiration and (over central Europe) cloud cover.