

# Mesoscale Meteorology and Climate — 2013

The group is working on the coupling of the regional climate model COSMO–CLM and the ocean model NEMO in the Mediterranean region and in the region of the Baltic and North Seas (Akhtar et al, 2014; Pham et al., 2014). Within **BiK-F** we still test and improve the land-surface model TERRA (moisture-dependent heat conductivity, phenology) as component of COSMO–CLM. The goal is to develop a better regional climate system able to investigate climate variability and feedbacks at regional scales. At the same time we work on improving regional climatologies, convective hazards, land surface assimilation, and more.

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**Theses:** H. Tang (PhD, with Prof. M. Fortelius, Finland), S. Kraehenmann (PhD), K. Gronwald (MSc) , N. Akhtar (MSc), P. Gierz (MSc), 2 BScs

## Highlight:

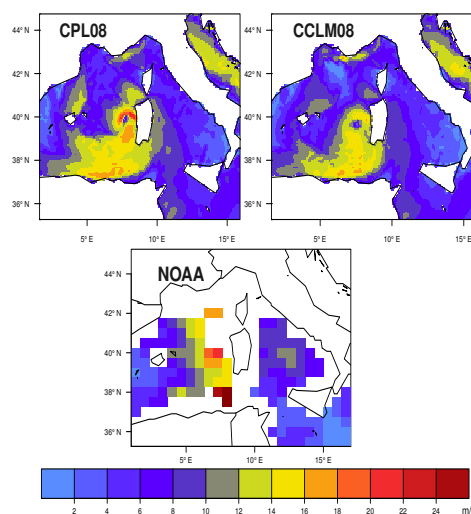


Figure 1: Simulated (top) and observed (bottom) 10-m wind speed (in m/s) during a MEDICANE (10 Dec. 1996, 18:0 UTC). The simulation were done with a gridspacing of  $0.088^\circ$  coupled with an active ocean (left) or driven by analysed sea surface temperature.

## Important Publications:

Akhtar, N., J. Brauch, A. Dobler, K. Béranger, B. Ahrens (2014). Medicanes in an ocean-atmosphere coupled regional climate model. Subm. to NHESS, printed in NHESS Discussions.

Liakka, J., F. Colleoni, B. Ahrens, T. Hickler (2014). Impact of vegetation dynamics on the onset of the Antarctic ice sheet. *Geophys. Res. Letters*, 41, 4, 12691276. DOI: 10.1002/2013GL058994.

Van Pham, T., J. Brauch, Ch. Dieterich, B. Frueh, B. Ahrens (2014). New coupled atmosphere-ocean-ice system COSMO-CLM/NEMO: On the air temperature sensitivity on the North and Baltic Seas. *Oceanologia*. In print.