

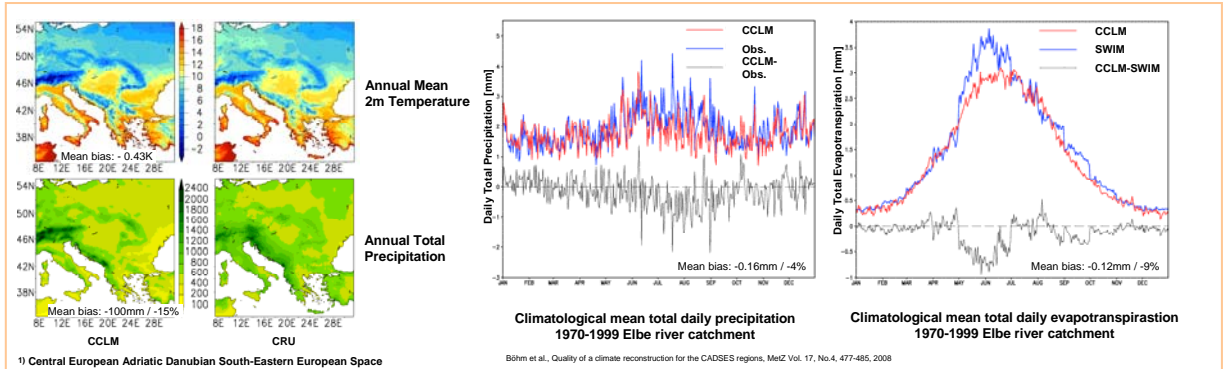
# CCLM – A MODEL FOR HIGH-RESOLUTION SIMULATIONS OF CLIMATE AND EXTREMES

CCLM is applied for climate and extremes reconstruction and scenario generation. At PIK, coupling to a hydrology and an urban area model is ongoing. Within the COSMO and CLM communities, the model is among others coupled with a sea ice module, a lake module, a fog module, an aerosol module and with a regional ocean model.

## THE HYDROLOGICAL CYCLE IN THE CADSES<sup>1)</sup> REGIONS

- High quality Elbe river catchment climate reconstructions -

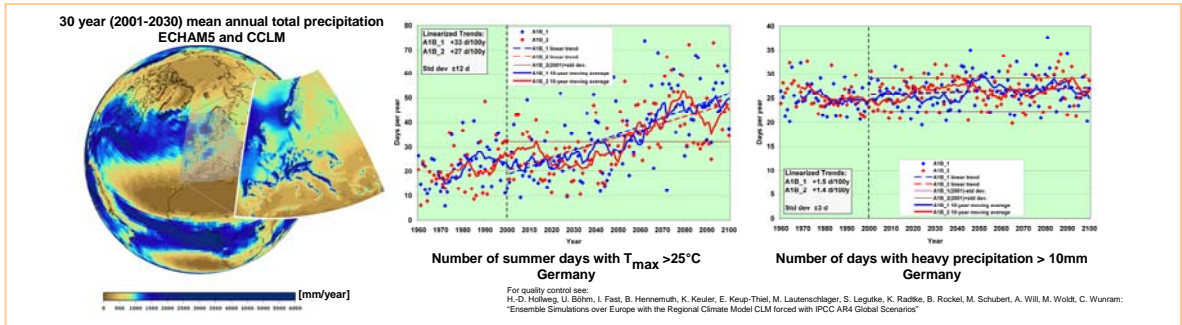
High-quality CCLM reconstruction of near-surface climate parameters in the Elbe river catchment - a solid basis for assessing climate-hydrology-vegetation feedbacks by coupling of CCLM and SWIM.



## THE CONSORTIUM RUNS

- Transient climate scenarios allowing to assess uncertainty -

With two realizations for each emission scenario, a range of uncertainty can roughly be estimated for the first time for high-resolution (~18km) regional climate simulations for Europe with CCLM.



## VERY HIGH-RESOLUTION RECONSTRUCTION OF THE DROUGHT 2003

- A double-nesting approach for ensembles of extreme scenarios -

Double-nesting (coarse resolution ~7km, high resolution ~2.5km) performs well (mean relative precipitation bias ~12 %) and nearly exactly reproduces the precipitation frequency distribution.

