

PARALLEL SESSION A : BENEFITS OF DOWNSCALING - A1: ADDED VALUE OF DOWNSCALLING

Searching for an Added Value of Precipitation in Downscaled Seasonal Hindcasts over East Africa: COSMO-CLM Forced by MPI-ESM

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Downscaling of seasonal hindcasts over East Africa with the regional climate model (RCM) COSMO-CLM (CCLM), forced by the global climate model (GCM), MPI-ESM is evaluated. The simulations are done for five months (May to September) for a ten year period (2000-2009), with the evaluation performed only for June to September. The accuracy of the RCM simulations is assessed using ground based and satellite gridded observation data. Both COSMO-CLM and MPI-ESM overestimate June to September precipitation over the Ethiopian highlands and in parts of the lowland with respect to all reference datasets. In addition we investigated the potential and real added value for both the RCM and the GCM hindcasts by up-scaling (arithmetic mean) the precipitation resolution both in temporal and in spatial scales. RCM forecast has a higher value of total monthly precipitation compared to the GCM over the lowlands of East Africa. Over different parts North Ethiopia (EN), South Ethiopia (ES), South Sudan (SS), and Sudan (S) for the daily precipitation 90th and 95th percentiles, the potential added value is high over EN and ES. In contrast, it is less in the lowlands region S and SS. The potential and relative potential added value decrease with decreasing the temporal resolution.

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