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Influence of SST in the West Africa Monsoon Seasonal Precipitation Forecast of ECMWF System 3

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The system 3 seasonal forecast of ECMWF (SYS3) is evaluated in terms of its precipitation forecasts for the West Africa monsoon at a lead time of 2 to 4 months in a 48 year hindcast dataset.
SYS3 reproduces the progression of the West Africa monsoon, but with a number of differences, most notably a southerly shift of the precipitation in the main monsoon months of July and August, the lack of pre-onset rainfall suppression and the sudden onset jump observed.
The model SST bias exceeds of 1.5K in the Gulf of Guinea through the monsoon months which would tend to enhance rainfall over the coast at the expense of the monsoon rainfall over the Sahel. The AMMA SOP of 2006 is taken in consideration as case study to evaluate the influence of the SST in the precipitation forecast. Using the same release of the atmospheric forecast model forced by observed SSTs, the monsoon rainfall reverts to its observed position, indicating the importance of the SST biases. The results indicate that the SST bias in the coupled model definitly plays a role in the WAM forecast performance.