

Analysis and forecast of extreme precipitation events over the Sahel from synoptic to interannual scale

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Abstract:

Over the recent decades, extreme precipitation events (EPEs) have become more frequent over the Sahel. Their properties, however, have so far received little attention. I will present their spatial distribution, intensity, seasonality, and interannual variability of EPEs using most of the available precipitation products to draw a common behavior of EPE over the Sahel. A particular attention has been paid to Burkina Faso where a dense rain gauge network has been made accessible. This dataset is used as a reference to evaluate the gridded products at seasonal and interannual scale. Based on the reference dataset, the meteorological factors leading to a typical EPE are then analyzed at synoptic scale using a composite analysis. It shows the role of tropical waves as key drivers of the variability of precipitation. The last part of the talk will present a forecast-research initiative between Météo-France and several Sahelian Meteorological Services (MISVA) which seek to translate our current knowledge of the drivers of precipitation variability into forecast products at synoptic, subseasonal and seasonal scale.