



Contribution ID: 35

Type: **Poster presentation**

Predicting summer rainfall in coastal northeast Australia for improved farming practices in sugar cane

Reliable forecasts of summer rainfall in coastal northeast Australia can empower sugar cane growers to better manage nitrogen applications reducing damage to the Great Barrier Reef. This study aims to explore the dynamical systems that affect rainfall in the wet tropical sugar cane growing region in northeast Australia, where nitrogen losses pose the greatest ecological threat. We then evaluate whether a seasonal climate forecasting model (ACCESS-S) is able to simulate these dynamical features effectively enough to provide local seasonal rainfall forecasts. El-Nino Southern Oscillation (ENSO) is the dominant feature of climate variability for northeast Australia; however, the moisture availability in any ENSO phase arises from the ENSO teleconnection to the north-south movements of the South Pacific Convergence Zone (SPCZ). While ACCESS-S can simulate the Nino3.4 variability during summer and a north-south translation of the SPCZ, spatial biases in the SPCZ latitude and slope alter the moisture availability to coastal northeast Australia inhibiting the skill of regional rainfall forecasts over the summer period. Therefore, we explore a hybrid forecasting approach to capitalise on existing statistical forecasts with the additional information from dynamical models.

Primary author: Dr DAYAL, Kavina (CSIRO)

Co-authors: Dr BROWN, Jaclyn (CSIRO); Mr BEISCHER, Tom (Bureau of Meteorology); Dr GREGORY, Paul (Bureau of Meteorology); Dr THORBURN, Peter (CSIRO)

Presenter: Dr DAYAL, Kavina (CSIRO)

Track Classification: Workshop on Predictability, dynamics and applications research using the TIGGE and S2S ensembles