



The downstream impact of the extratropical transition of tropical cyclones

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Forecasters' wisdom in European operational forecasting centres is that the presence of a tropical cyclone undergoing extratropical transition (ET) in the western Atlantic leads to considerable uncertainty in the medium-range weather forecasts for western and central Europe. The reduced predictability may be associated with the direct impact of an ET event, if the ex-tropical cyclone is predicted to reach Europe as an extratropical storm. Arguably the larger impact on the predictability, however, occurs when the interaction between a tropical cyclone and the midlatitude flow results in the excitation of a Rossby wave train. This may initiate extratropical cyclogenesis in the eastern Atlantic, or modify the flow pattern in the Mediterranean enhancing the risk of a severe precipitation event.

In this presentation we explore the mechanisms by which ET can impact the predictability for Europe using results from operational deterministic and ensemble forecasts and from idealised modelling studies.