



## **Evaluating the role of latent heating in extratropical cyclone**

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Cyclones that form in the east Atlantic have a large impact on the day-to-day weather in western Europe through their associated wind and precipitation patterns. They often develop rapidly and are small in scale, making them difficult to forecast. At present the factors controlling the development of these cyclones is not well understood. It is hypothesised that latent heating may play an important role in their development.

The aim of this work is to objectively classify and composite a long time series climatology of North Atlantic extratropical cyclone (derived from the ERA-Interim dataset) using a documented three-fold classification scheme. Intensifying cyclones are classified according to the temporal evolution of their quasi-geostrophic forcing and vertical tilt. Previous studies have suggested that latent heating plays a significant role in the intensification of cyclones in one of these categories. The importance of latent heating in extratropical cyclone development based on this cyclone classification and compositing method will be presented.