

Abstract

The persistence of a particular atmospheric configuration can contribute vital information to the forecasting of extreme temperature events. The definition of atmospheric persistence is, however, often somewhat subjective. In recent years a technique using dynamical systems theory has leveraged the concept of atmospheric recurrences, also referred to as analogues, to quantify persistence in an objective manner. This method infers properties about a given atmospheric configuration based on the behaviour of other similar configurations. The link between this definition of persistence and European temperature extremes is explored before evaluating persistence in a forecast context. In particular, the application of the persistence metric to extended-range reforecast data and its potential value as an additional measure for forecast evaluation will be considered. The results indicate that persistent atmospheric configurations are not a necessary requirement for warm temperature extremes. Furthermore, preliminary findings suggest that heatwaves which are associated with more persistent configurations display increased forecast skill.