Initial tendencies of cloud regimes in the Unified Model

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The Met Office Unified Forecast-Climate Model is used to compare the properties of simulated cloud regimes over climate timescales with those produced in short-range forecasts initialised from operational analyses. In general, the cloud regime properties are found to be similar at all forecast lead times, including the climatological mean. This suggests that weaknesses in the representation of fast local processes are responsible for errors in the simulation of the cloud regimes on climate timescales. This conclusion would have been difficult to establish were it not for the use of short-range forecasts. The increased horizontal resolution of the model used for numerical weather prediction generally has little impact on the mean cloud regime properties.