2.1 Global Atmospheric Model

- 2.1.1 Model Structure
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- 2.1.3 Representation of Geographical Features
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Global Atmospheric Model

The ECMWF Atmospheric Global Circulation model describes the dynamical evolution of the atmosphere worldwide on the resolved scale and is used for medium-range, extended medium-range, and seasonal forecasts. It is a general atmospheric model of uniform model physics and structure, which is executed on a global scale at several resolutions each appropriate to the forecast period. The model uses the most accurate estimate of the current conditions and the most up-to-date description of the model physics and employs throughout modelled land surface conditions (e.g. snow cover, soil moisture), ocean conditions (e.g. sea-surface temperature, sea ice), stratospheric representation and atmospheric dynamical processes (that together help deliver Rossby wave propagation, weather regime changes, etc.). However, a single execution of the model does not give definitive results so perturbed runs are also generated. These are designed to represent the impact that changes to the initial conditions and physical parameterisations - that are both commensurate in magnitude with what we believe to be possible truths - would actually have on the atmospheric evolution. This facilitates assessment of the uncertainty in the forecast, which encompasses the predictability of the future evolution of weather systems.