

Forecasting skill

The models used in the SPACECAST project are physics based models, not empirical or neural network type models. This has the advantage that they should be able to respond better to space weather events that are outside the norm.

Our models have been tested against satellite data during geomagnetic storms and other types of space weather events. The incorporation of physical processes such as wave-particle interactions has been shown to improve the agreement between modelling and data substantially. These processes are included in the current generation of SPACECAST models.

Forecasting raises new difficulties since we do not know the boundary conditions in advance and these will affect the accuracy of the forecasts. SPACECAST will collect statistics on how well our forecasts predict the electron flux measured by GOES and satellites in other orbits. These will be combined to give a skill score, which is a well defined standard measure of how well the predictions perform. These will be made available later in the project.