



Systematic and large temperature errors in a dynamic downscaling of atmospheric flow

Andréa Massad (1,3), Haraldur Ólafsson (2,3), Guðrún Nína Petersen (3), Hálf dán Ágústsson (2,3,4), and Ólafur Rögnvaldsson (4)

(1) École Normale Supérieure, Paris, (2) Háskóli Íslands, (3) Veðurstofa Íslands, (4) Reiknistofa í veðurfræði

Years of atmospheric flow over Iceland have been simulated with the WRF model, using boundaries from the ECMWF. In general, the flow is well reproduced, but there are still errors. By comparison with a multitude of observations, the largest errors have been analysed in terms of the physical or numerical processes that appear to go wrong.

Many of the largest temperature errors are associated with an incorrect representation of the surface of the earth during the snow melting season. Another characteristic of large errors is the presence of misplaced large horizontal temperature gradients in coastal areas. Wrong vertical mixing gave surprisingly few large errors.

There are some errors due to incorrect timing of incoming weather systems at the boundaries, but no large errors can be traced to wrongly reproduced temperature of airmasses advected into the area.