# Submitted Abstract

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## Abstract

Most numerical models employ terrain-following vertical coordinates. Close to the ground, the vertical coordinate surfaces run parallel to the underlying orography. With increasing altitude, the orographic signal gradually decays until the levels become truly flat. While it is desirable to have flat vertical coordinate surfaces at low altitudes, the design also has to incorporate a number of constraints: E.g. levels need a minimal thickness in order that the model remains numerically stable, at the same time they may not become too thick to be able to represent steep vertical gradients. This contribution discusses ongoing work about finding an optimal vertical coordinate formulation for the ICON model employing a 1 km horizontal mesh over the Alps.