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# Global simulations of the atmosphere at 1.25 km resolution with the Integrated Forecast System

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Global simulations with up 1.25 km resolution are presented that were performed with the weather forecast model of the European Centre for Medium-Range Weather Forecasts (ECMWF). Simulations are uncoupled (no ocean, no wave model) and have 62 vertical levels but show otherwise the full complexity of weather forecast simulations including real-world initial conditions and real-world topography. Simulations are evaluated regarding computational efficiency and model fidelity. Scaling results are presented that were performed on the fastest supercomputer of Europe - Piz Daint. Important choices for the model configuration at cloud-resolving resolution are discussed such as the use of hydrostatic or non-hydrostatic equations and the length of the time step.