PRIMEVERA: PRocess-based climate sIMulation: AdVances in high-resolution modelling and European climate Risk Assessment

The overarching goal of PRIMAVERA is to develop a new generation of advanced and well-evaluated high-resolution global climate models, capable of simulating and predicting regional climate with unprecedented fidelity, for the benefit of governments, business and society in general. High-resolution has been identified as one essential element of the development of GCMs to reproduce key climate processes with higher fidelity than conventional GCMs, thus enabling detailed process understanding. PRIMAVERA draws on key scientific and technological advances in four cross-disciplinary areas: i) seamless weather and climate; ii) process-based assessment; iii) high-performance computing (HPC); iv) IT, networks and post-processing capacity for large datasets. Optimally combining these advances is a huge challenge and has never been attempted before. PRIMAVERA will, for the first time ever, make highly coordinated use of European high-resolution GCMs to provide trustworthy climate reconstructions and climate projections for the period 1950 to 2050.

To accomplish the delieverables, coupled simulations with MPI-ESM at two resolutions (T127/TP04, T255/TP6M) and a series of AMIP-simulations with ECHAM6 at horizontal resolution T255 and T511 will be carried out.