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Realistic greenhouse gas forcing and seasonal forecasts

M. A. Liniger, H. Mathis, C. Appenzeller

Climate Services, Federal Office of Meteorology and Climatology (MeteoSwiss), Kraehbuehlstrasse 58, CH-8044 Zuerich, Switzerland (mark.liniger@meteoswiss.ch)

This contribution investigates the improvement of seasonal forecasts by including realistically varying greenhouse gas (GHG) concentrations. Forecasts starting every May and November are compared over the period 1958 until 2001. One set has constant GHG concentrations while an other one has a realistic GHG trend. The large scale temperature trends derived at different lead times are compared in between the forecast sets and observations over the entire 44 years. It is shown that after a few months the anthropogenic climate change signal is lost up to 70% although it was present in the initial conditions. The differences in trends vary with lead times, seasons and regions. Strongest effects are found in the Tropics and the Summer Hemispheres, in particular the Northern One. On local scale, the improvement is not widespread in trends and very weak in predicting detrended interannual variability. Both sets exhibit a strong absolute temperature bias.