



Corrigendum to **“An investigation of weighting schemes suitable for incorporating large ensembles into multi-model ensembles” published in Earth Syst. Dynam., 11, 807–834, 2020**

Anna Louise Merrifield, Lukas Brunner, Ruth Lorenz, Iselin Medhaug, and Reto Knutti

Institute for Atmospheric and Climate Science, ETH Zurich, Zurich, Switzerland

Correspondence: Anna Louise Merrifield (anna.merrifield@env.ethz.ch)

Published: 3 March 2021

Performance weights used in this study were affected by an incorrect average observed climatological surface air temperature (SAT) in the weighting code: absolute temperature values from ERA-20C were averaged with Berkeley Earth Surface Temperature anomalies (with respect to the 1951–1980 base period) rather than absolute temperature values. As a result, the average observed SAT used by the weighting code to compute the observed 1950–1969 and 1990–2009 climatological SAT predictors was spuriously warmer in winter and cooler in summer than shown in Fig. 1.

The inclusion of correct observed climatological SAT predictors does not change weighted distributional characteristics within the paper. All conclusions drawn are robust and unchanged. However, the correction strengthens the overall finding that the independence scaling is necessary to prevent high-performing SMILEs from unduly narrowing uncertainty in a multi-model, multi-member ensemble. The contribution of the SMILEs to the performance-weighted summer (JJA) Mediterranean (MED) SAT distribution increases from the reported 51 % to 66 % when the correct predictors are used. The MPI grand ensemble notably becomes the majority contributor to the performance-weighted JJA MED SAT distribution, receiving 39 % (from 29 %) of the total weight (Fig. 3d, performance group, green bar).

Corrected weighting files have been added to the repository; the updated package version 1.1 can be accessed at <https://doi.org/10.5281/zenodo.4555810>.