

Supplementary figures

Evaluating the 11-year solar cycle and short-term ^{10}Be deposition events with novel excess water samples from the EGRIP project

Chiara I. Paleari¹, Florian Mekhaldi^{1,2}, Tobias Erhardt^{3,4}, Minjie Zheng^{1,5}, Marcus Christl⁶, Florian Adolphi^{4,7}, Maria Hörhold⁴, Raimund Muscheler¹

¹Department of Geology, Lund University, Lund, Sweden

²British Antarctic Survey, Ice Dynamics and Paleoclimate, Cambridge, UK

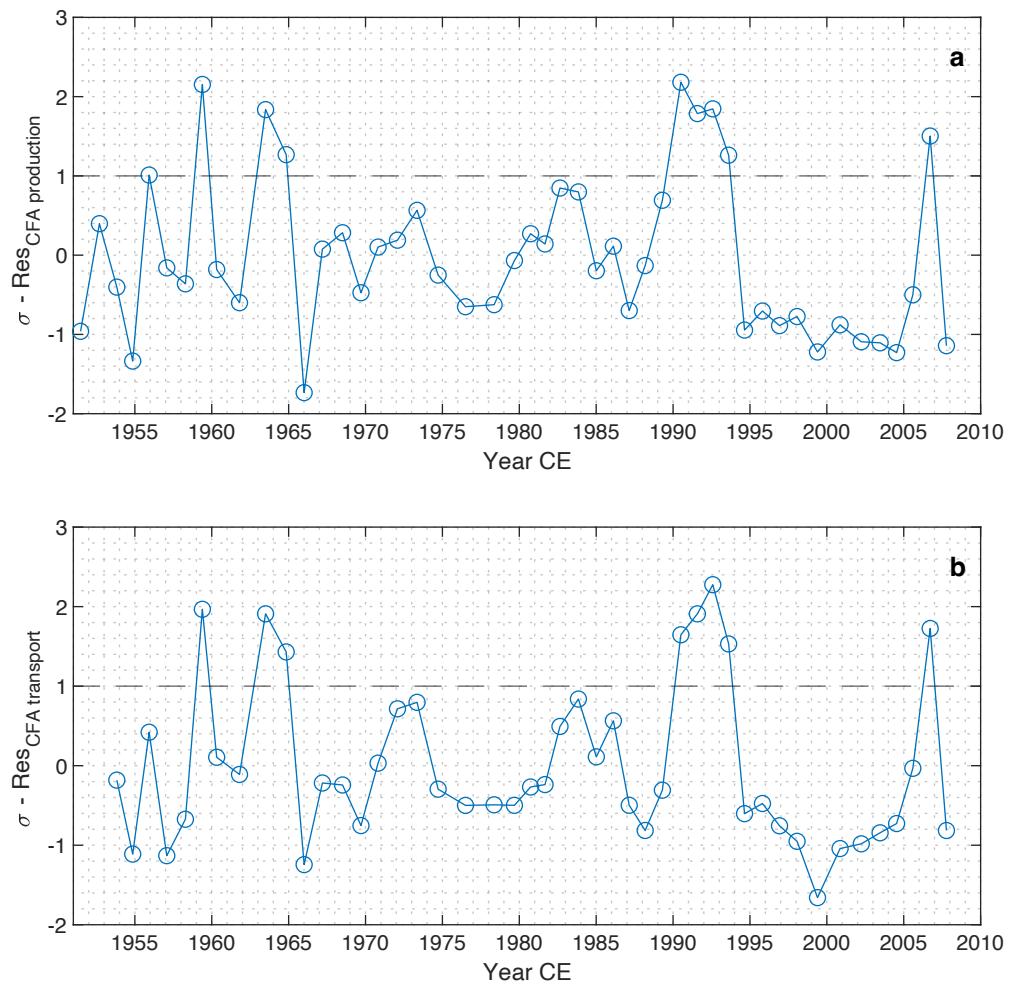
³Climate and Environmental Physics, Physics Institute and Oeschger Center for Climate Change Research, University of Bern, Bern, Switzerland

⁴Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven, Germany

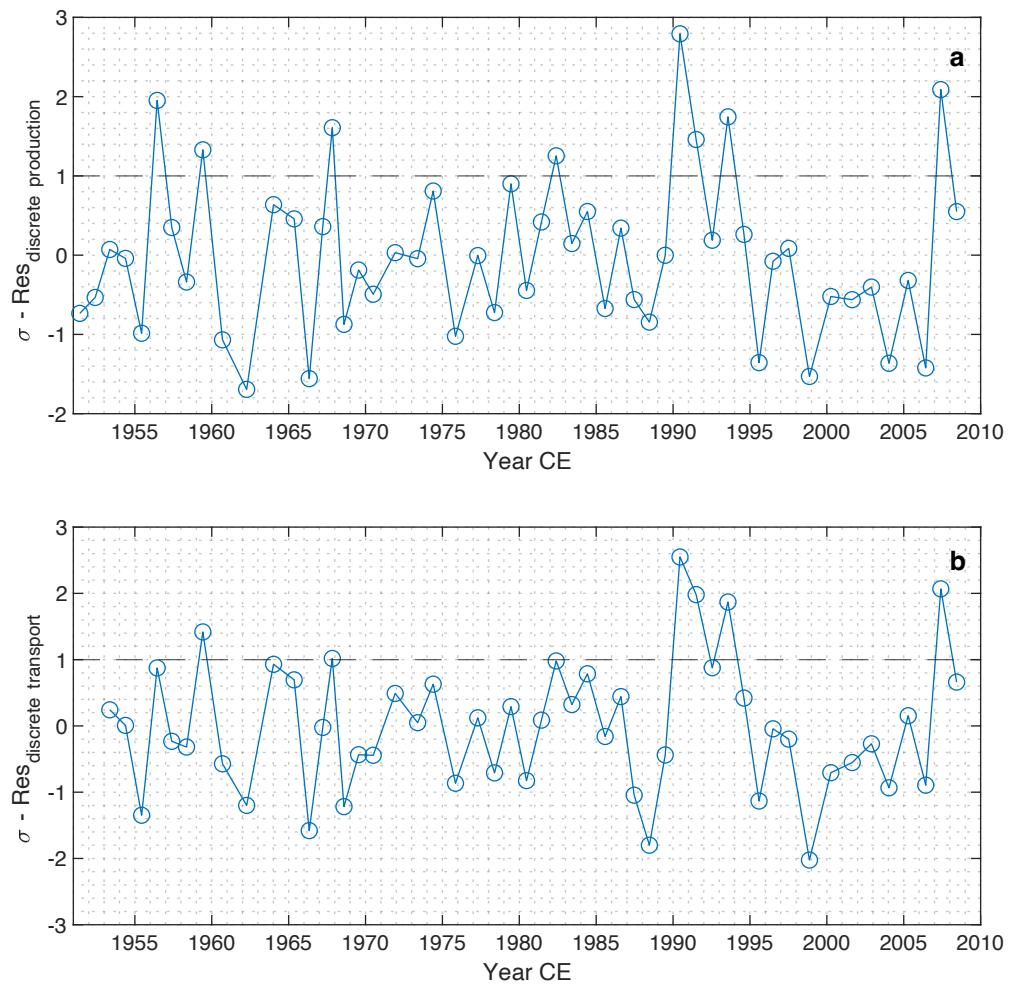
⁵Institute for Atmospheric and Climate Science, ETH Zürich, Zürich, Switzerland

⁶Laboratory of Ion Beam Physics, ETH Zürich, Zürich, Switzerland

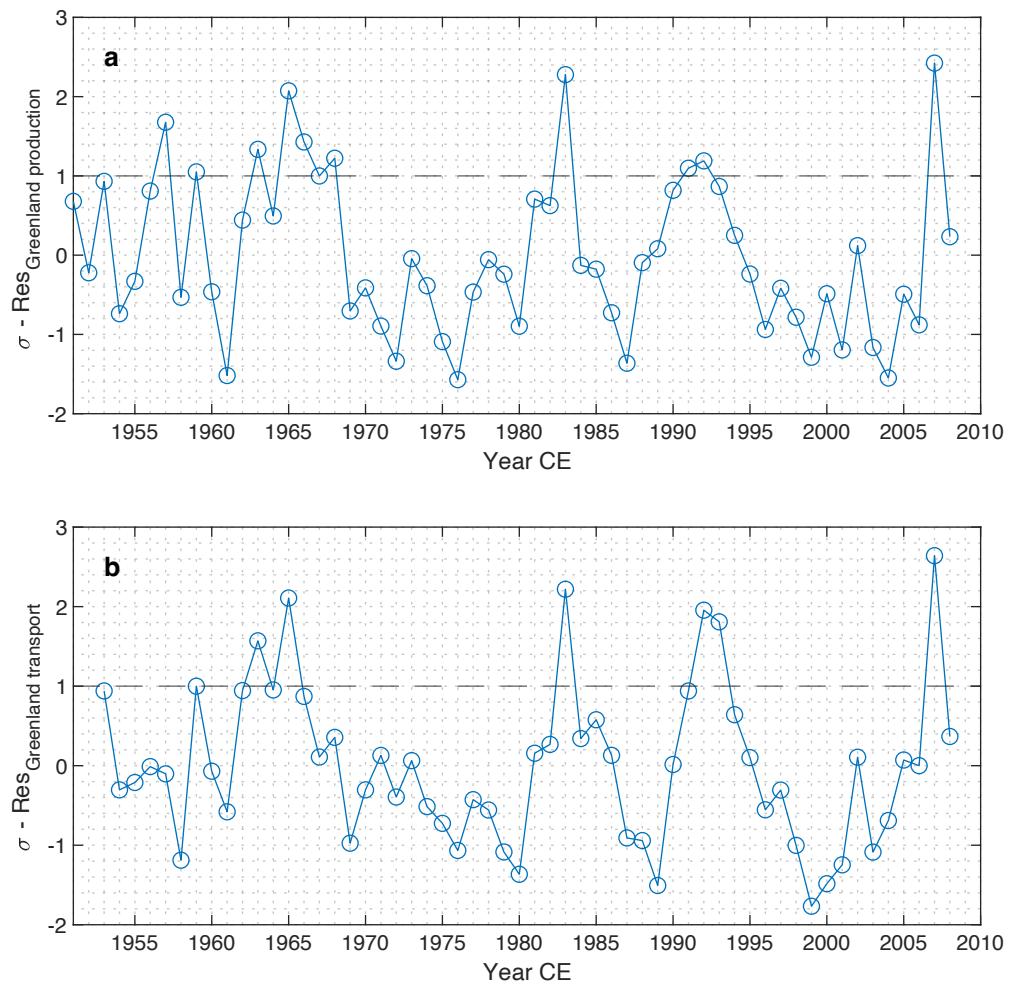
⁷Dept. of Geosciences, Bremen University, Bremen, Germany



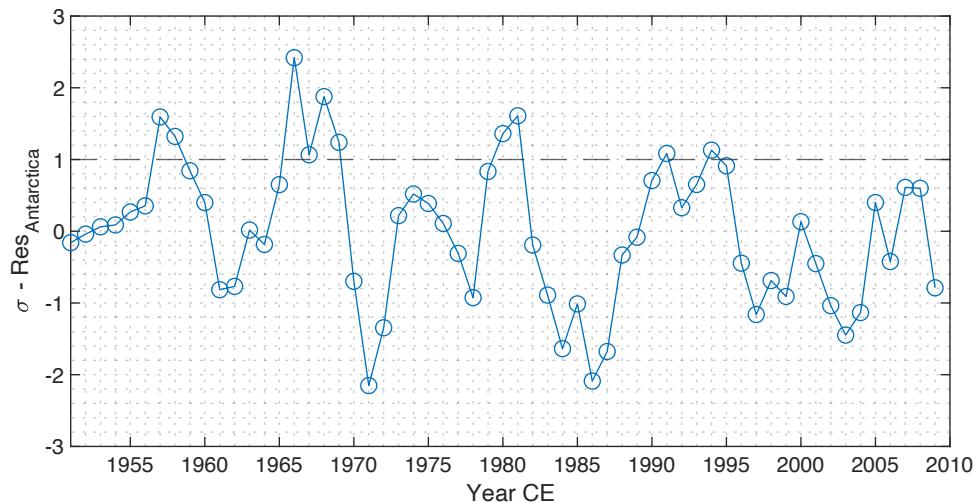
S1. Standard scores for the EGRIP S6 ^{10}Be record from CFA samples. Panel a shows the standardized residuals obtained by subtracting the normalized theoretical ^{10}Be global production rate from the normalized ^{10}Be record since 1951. Panel b shows the same, but for the ^{10}Be fluxes including the transport in the Northern Hemisphere. The theoretical ^{10}Be global production rate record is from (Mekhaldi et al., 2021).



S2. Standard scores for the EGRIP S6 ^{10}Be record from discrete samples. Panel a shows the standardized residuals obtained by subtracting the normalized theoretical ^{10}Be global production rate from the normalized ^{10}Be record since 1951. Panel b shows the same, but for the ^{10}Be fluxes including the transport in the Northern Hemisphere. The theoretical ^{10}Be global production rate record is from (Mekhaldi et al., 2021).



S3. Standard scores for the ^{10}Be Greenland stack. Panel a shows the standardized residuals obtained by subtracting the normalized theoretical ^{10}Be global production rate from the normalized ^{10}Be record since 1951. Panel b shows the same, but for the ^{10}Be fluxes including the transport in the Northern Hemisphere. The theoretical ^{10}Be global production rate record is from (Mekhaldi et al., 2021).



S4. Standard scores for the ^{10}Be Antarctic stack. The standardized residuals were obtained by subtracting the normalized theoretical ^{10}Be global production rate from the normalized ^{10}Be record since 1951. The theoretical ^{10}Be global production rate record is from (Mekhaldi et al., 2021).

References

Mekhaldi, F., Adolphi, F., Herbst, K., and Muscheler, R.: The Signal of Solar Storms Embedded in Cosmogenic Radionuclides: Detectability and Uncertainties, 2,3Journal Geophys. Res. Sp. Phys., 126, <https://doi.org/10.1029/2021ja029351>, 2021.