



Supplementary materials

Global Dimming and Brightening Features during the First Decade of the 21st Century

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(a)



Figure S1. Comparison between the variability of time series of model-computed and station deseasonalized anomalies of monthly SSR fluxes during 2001-2009 as quantified with the difference between their 95% Confidence Intervals (95% CI). The size of circles indicates the magnitude of computed percent differences between model and station 95% CI (confidence interval) values over the globe for 20 BSRN (**a**) and 105 GEBA (**b**) stations. Blue and red circles indicate BSRN and GEBA stations for which model computations and station measurements agree and disagree, respectively.





Figure S2. Time series of deseasonalized anomalies of monthly SSR fluxes averaged over land (green lines), ocean (blue lines) and land + ocean (black lines) regions of the northern hemisphere (**a**), and southern hemisphere (**b**), over the period 2001–2006. The GDB magnitudes (Δ SSR, in W m⁻²) and the associated standard error values) over the period 2001–2006 are also given for each hemisphere.