Figure S1. Relative difference in anually avearaged the surface emissions of isoprene (a and b) and monoterpenes (c and d) for the $2xCO_2$ (a and c) and the $+\Delta SST$ (b and d) experiments. The relative difference is defined as the (FB-ON - FB-OFF) / FB-OFF.
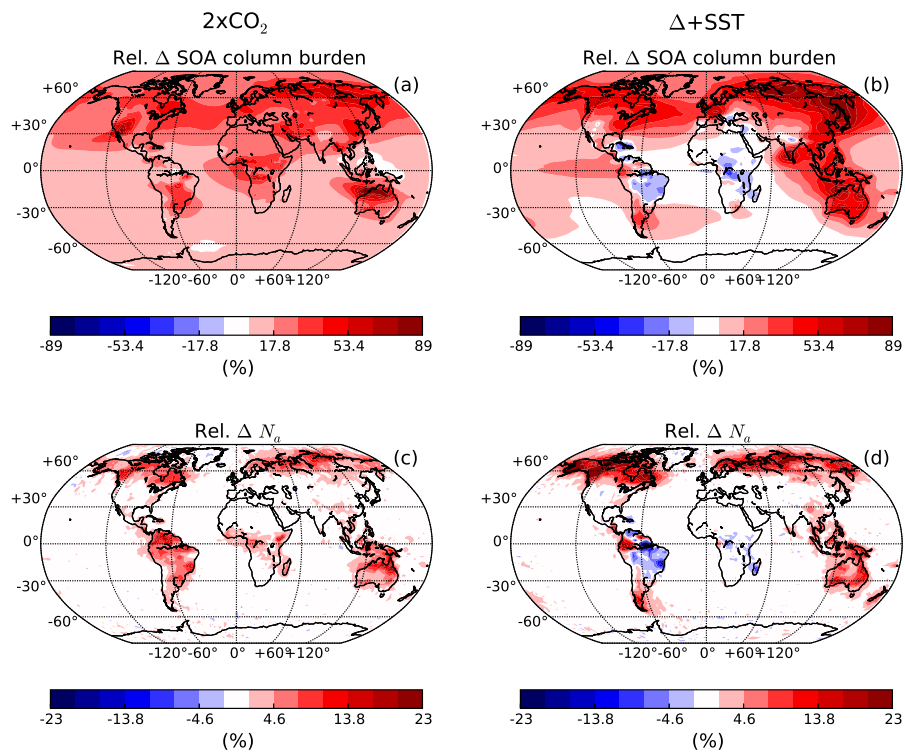
Figure S2. Relative difference in annualy averaged column burden of SOA (a and b) as well as N_a in the boundary layer (c and d) for the 2xCO$_2$ (a and c) +ΔSST (b and d) experiments.
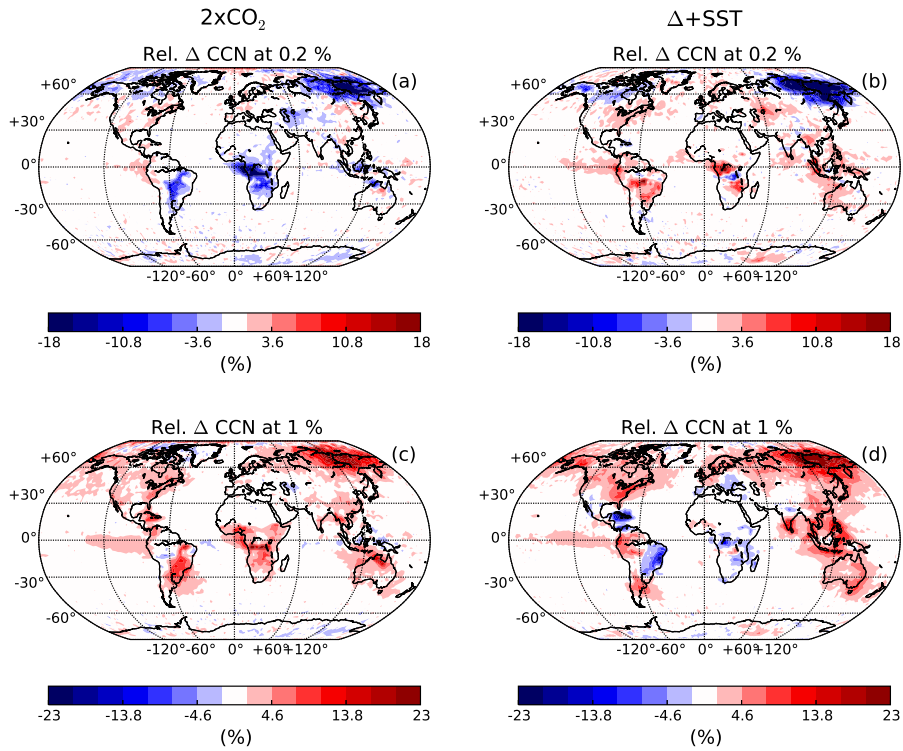
Figure S3. The relative difference between the FB-ON and FB-OFF simulations for the $2xCO_2$ (a and c) and $+\Delta SST$ (b and d) experiment. The difference shown is the annualy averaged concentration of CCN at 0.2 % (a and b) and 0.4 % (c and d) supersaturation in the boundary layer.
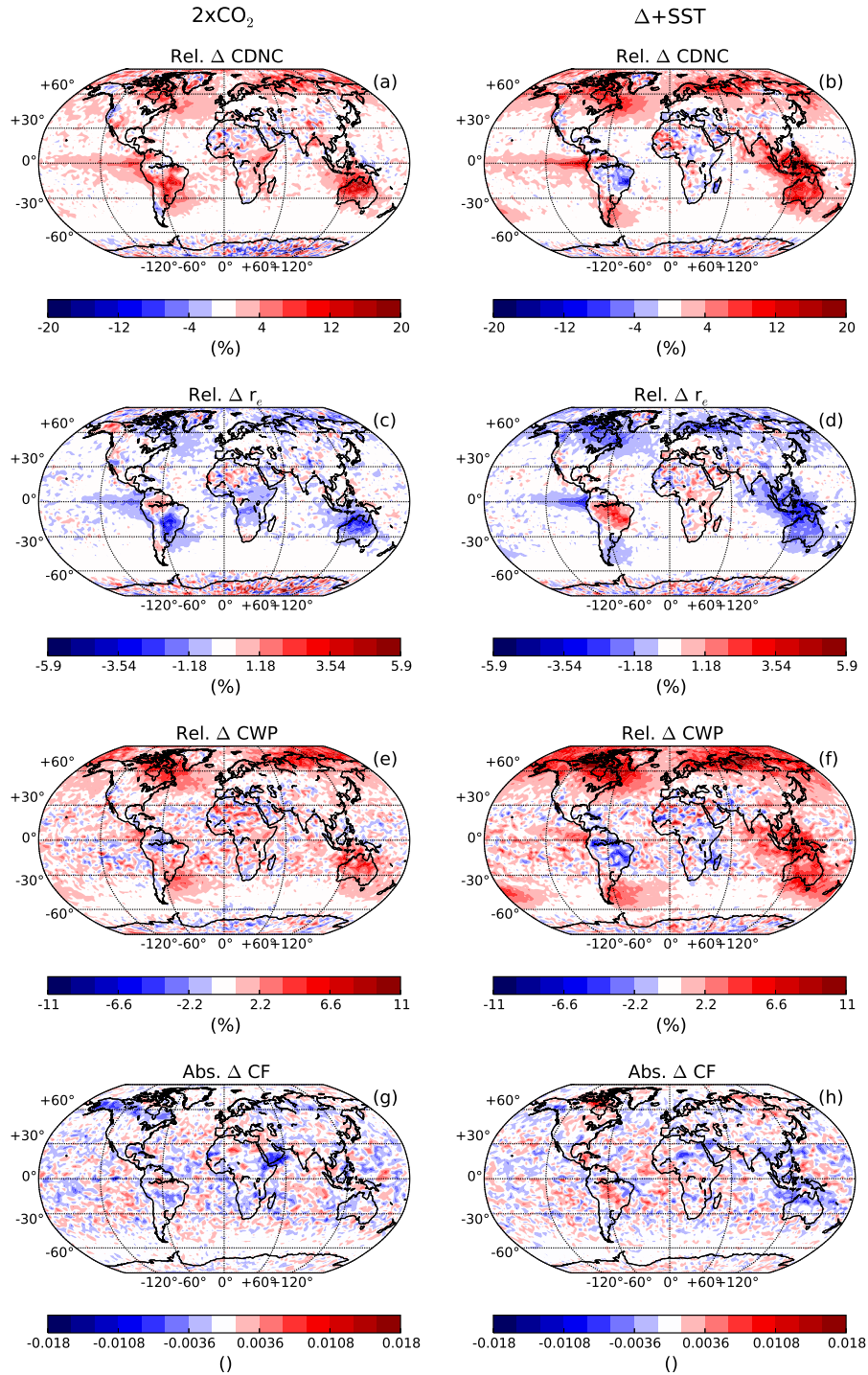
Figure S4. The relative difference in annualy averaged CDNC (a and b), r_e (c and d), and CWP (e and f) as well as the absolute difference in annualy averaged CF (g and h) between the FB-ON and FB-OFF simulations for the $2xCO_2$ (a, c, e, g) and $+\Delta SST$ (b, d, f, h) experiment.
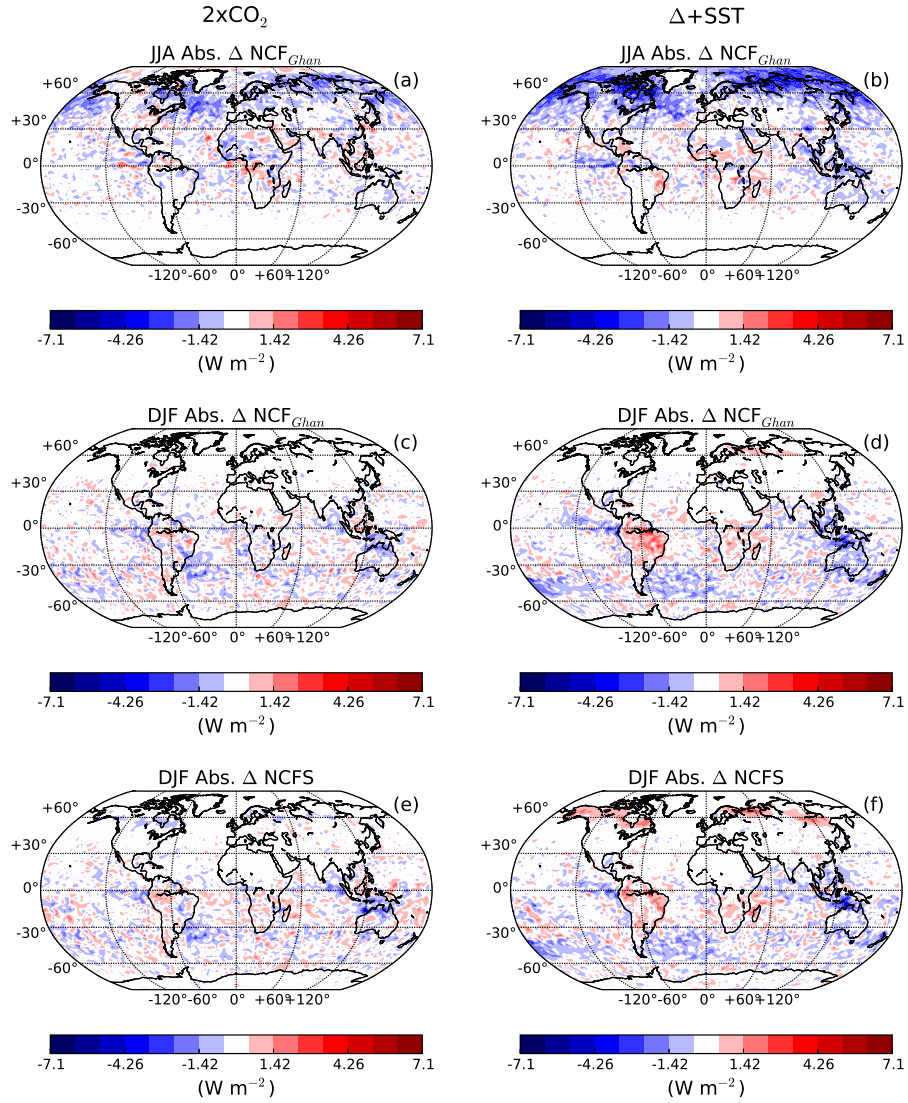
Figure S5. The absolute difference between the FB-ON and FB-OFF simulations for the NCF_{Ghan} during June, July and August (a and b), December January and February (c and d) as well as the NCFS during December January and February (e and f). The averages are from the $2xCO_2$ (a, c, d) and $+\Delta SST$ (b, d, c) experiment.
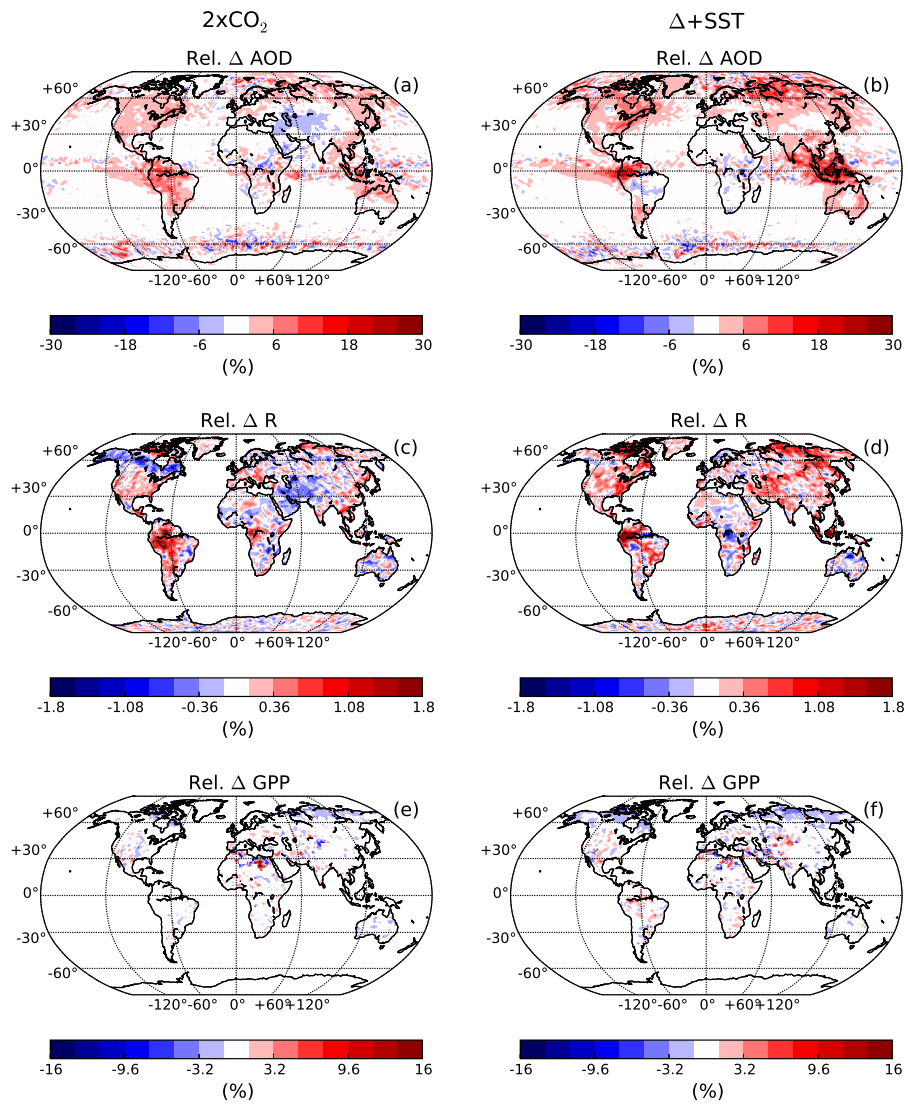
Figure S6. The figure shows the relative difference in annualy averaged AOD (a and b), R (c and d) and GPP (e and f) for the 2xCO$_2$ (a, c, e, g) and +ΔSST (b, d, f, h) experiment.
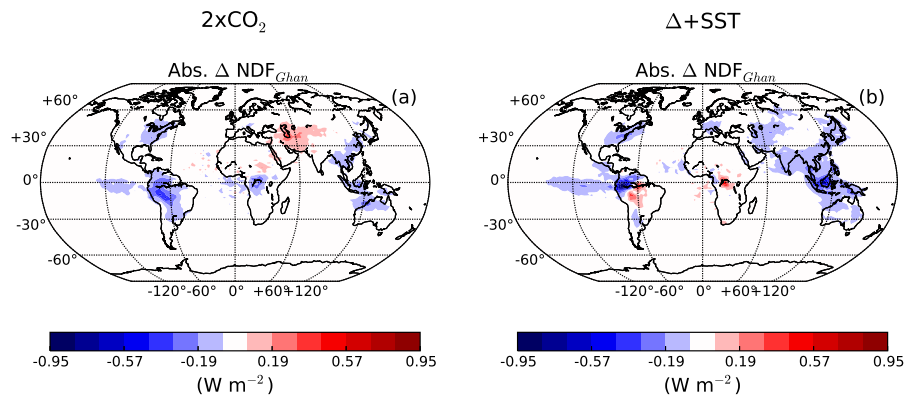
Figure S7. The figure shows the difference in the annualy averaged NDF_{Ghan} between the FB-ON and FB-OFF simulations for the $2xCO_2$ (a) and $+\Delta SST$ (b) experiment.