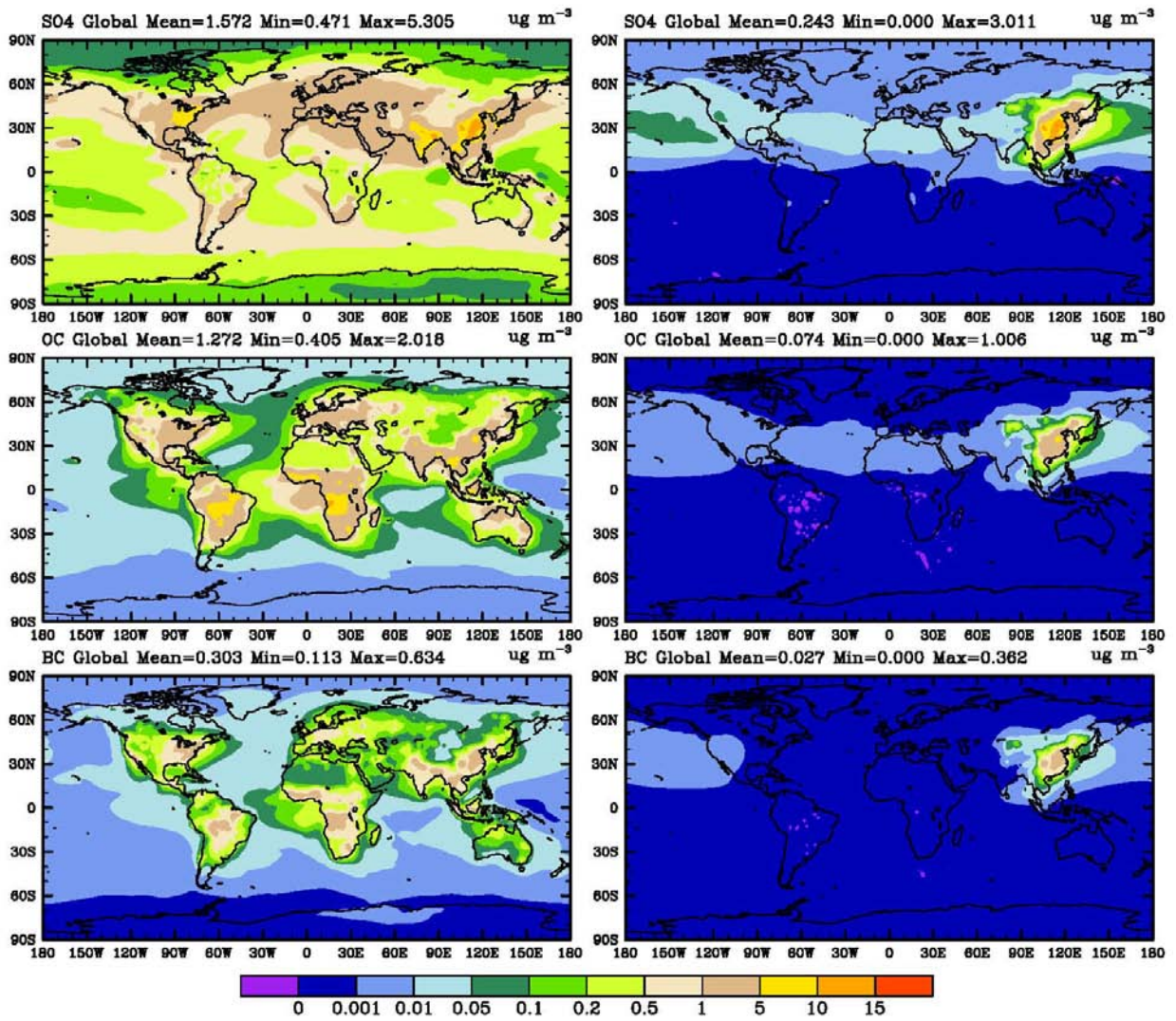**Present and potential future contributions of sulfate, black and organic carbon aerosols from China to global air quality, premature mortality and radiative forcing**

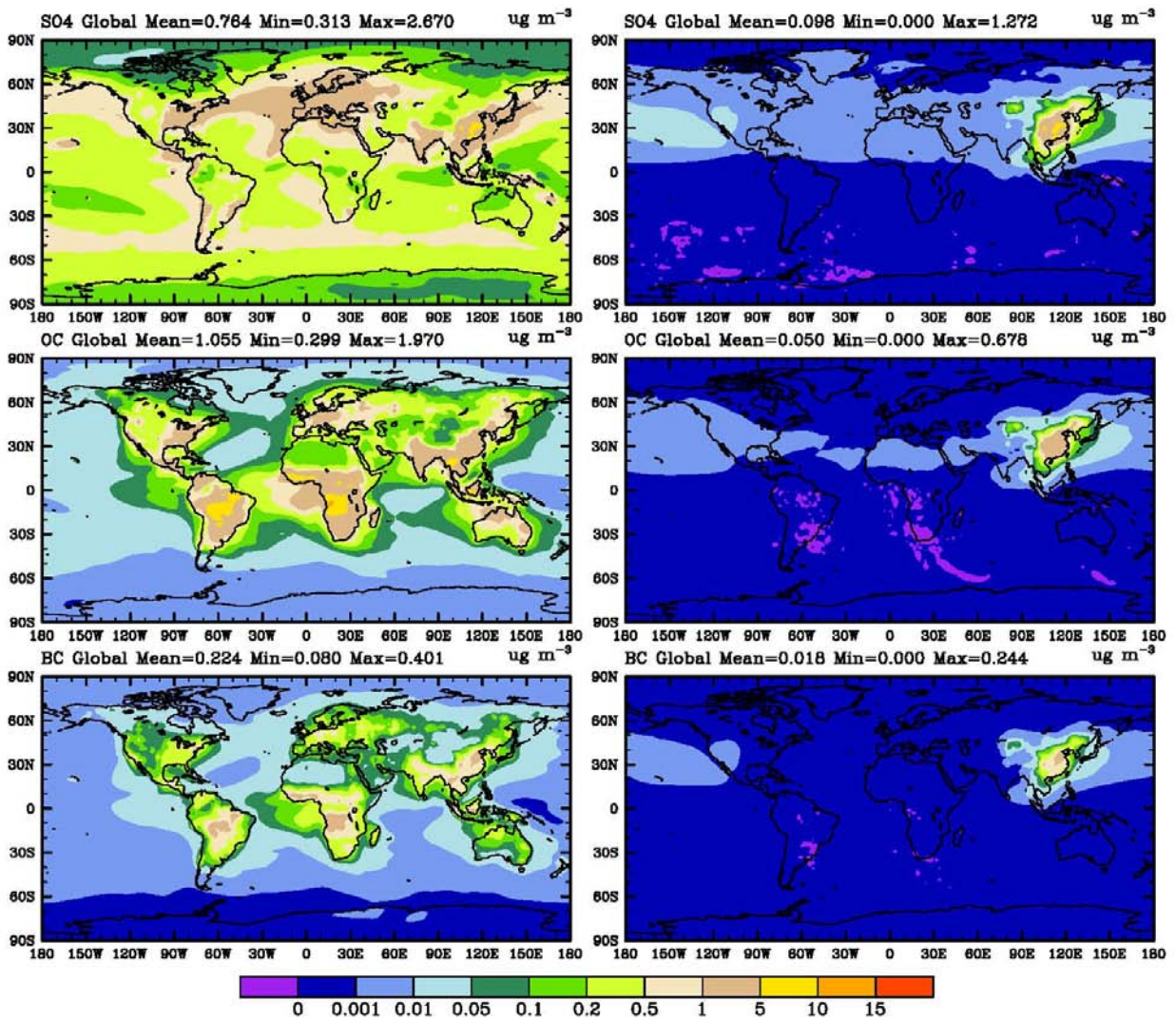**Eri Saikawa, Vaishali Naik, Larry W. Horowitz, Junfeng Liu, Denise L. Mauzerall**

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SO4 Global Mean=1.572 Min=0.471 Max=5.305   ug m⁻³
SO4 Global Mean=0.243 Min=0.000 Max=3.011   ug m⁻³
OC Global Mean=1.272 Min=0.405 Max=2.018   ug m⁻³
OC Global Mean=0.074 Min=0.000 Max=1.006   ug m⁻³
BC Global Mean=0.303 Min=0.113 Max=0.634   ug m⁻³
BC Global Mean=0.027 Min=0.000 Max=0.362   ug m⁻³
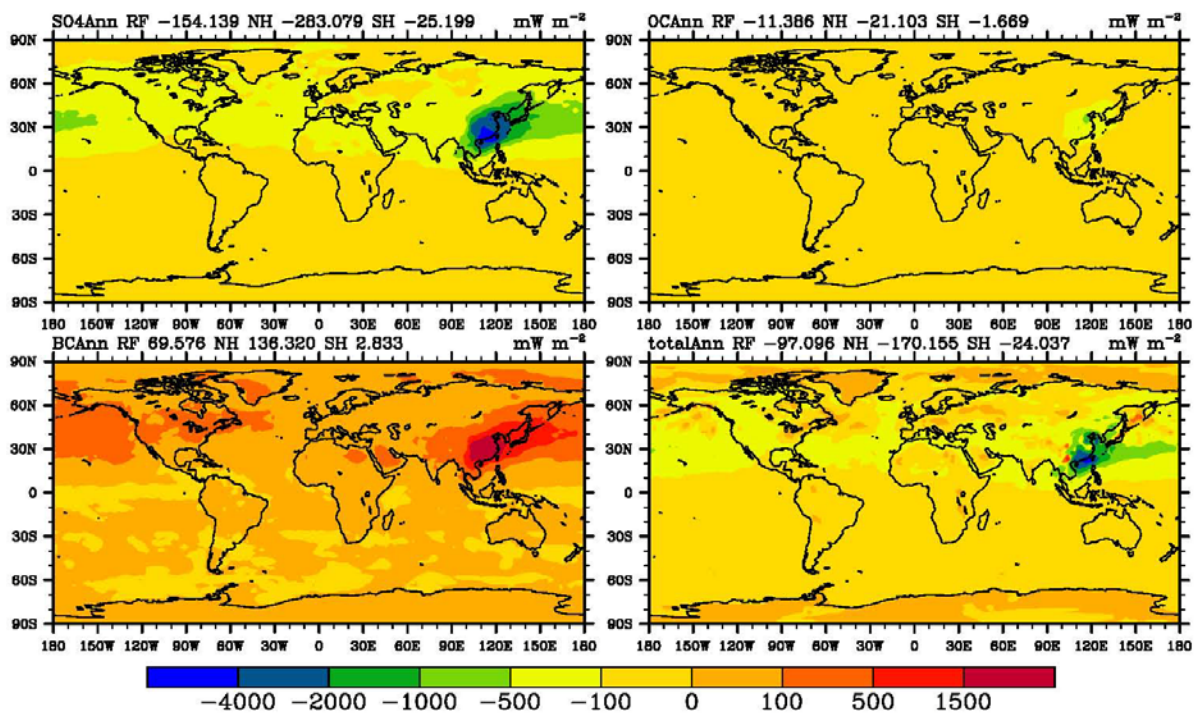
0   0.001   0.01   0.05   0.1   0.2   0.5   1   5   10   15

Figure S1. Annual average global surface aerosol concentrations (left) and China's contribution to annual average global surface aerosol concentrations (right) for 2030 CLE (a) SO_4^{2-}, (b) OC, (c) BC.
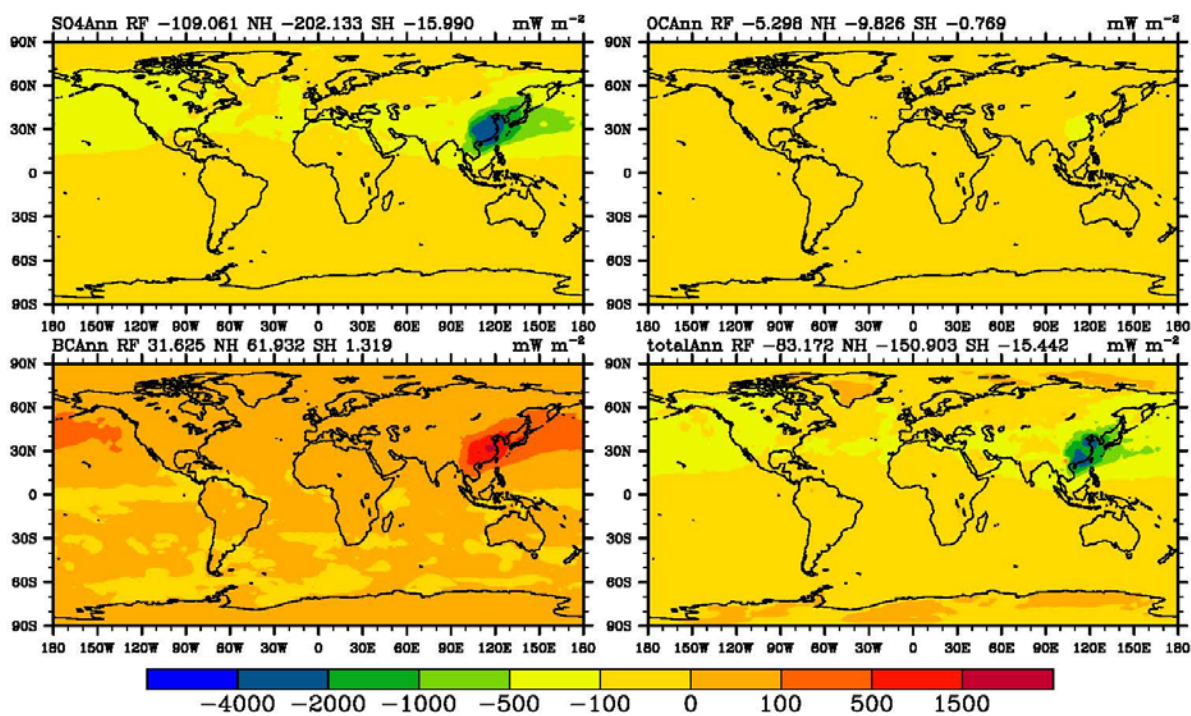
SO4 Global Mean=0.764 Min=0.313 Max=2.670   ug m^{-3}

SO4 Global Mean=0.098 Min=0.000 Max=1.272   ug m^{-3}

OC Global Mean=1.055 Min=0.299 Max=1.970   ug m^{-3}

OC Global Mean=0.050 Min=0.000 Max=0.678   ug m^{-3}

BC Global Mean=0.224 Min=0.080 Max=0.401   ug m^{-3}

BC Global Mean=0.018 Min=0.000 Max=0.244   ug m^{-3}

0 0.001 0.01 0.05 0.1 0.2 0.5 1 5 10 15

1
2
3   **Figure S2. Annual average global surface aerosol concentrations (left) and China's contribution to annual**
4   **average global surface aerosol concentrations (right) for 2030 MFR (a) SO$_4^{2-}$, (b) OC, (c) BC.**

SO4Ann RF −154.139 NH −283.079 SH −25.199   mW m^{-2}

OCAnn RF −11.386 NH −21.103 SH −1.669   mW m^{-2}

BCAnn RF 69.576 NH 136.320 SH 2.833   mW m^{-2}

totalAnn RF −97.096 NH −170.155 SH −24.037   mW m^{-2}

−4000 −2000 −1000 −500 −100 0 100 500 1500

Figure S3. China's contribution to total sky annual adjusted radiative forcing (in mW m^{-2}) at the top of the atmosphere for 2030 BAU (a) SO$_4^{2-}$, (b) OC, (c) BC, (d) total.

SO4Ann RF −109.061 NH −202.133 SH −15.990   mW m^{-2}

OCAnn RF −5.298 NH −9.826 SH −0.769   mW m^{-2}

BCAnn RF 31.625 NH 61.932 SH 1.319   mW m^{-2}

totalAnn RF −83.172 NH −150.903 SH −15.442   mW m^{-2}

−4000 −2000 −1000 −500 −100 0 100 500 1500

Figure S4. China's contribution to total sky annual adjusted radiative forcing (in mW m^{-2}) at the top of the atmosphere for 2030 CLE. (a) SO$_4^{2-}$, (b) OC, (c) BC, (d) total.
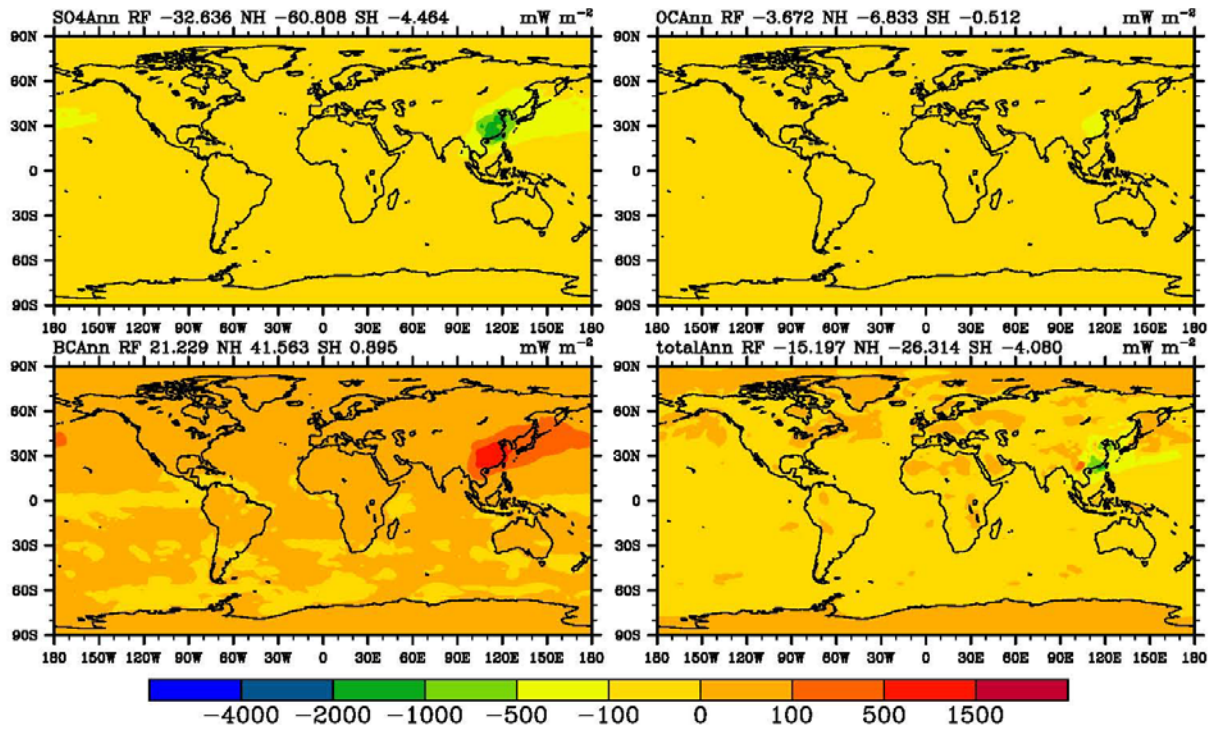
1
2 Figure S5. China's contribution to total sky annual adjusted radiative forcing (in mW m^{-2}) at the top of the
3 atmosphere for 2030 MFR. (a) SO$_4^{2-}$, (b) OC, (c) BC, (d) total.
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