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Declining, seasonal-varying emissions of sulfur hexafluoride from the United States

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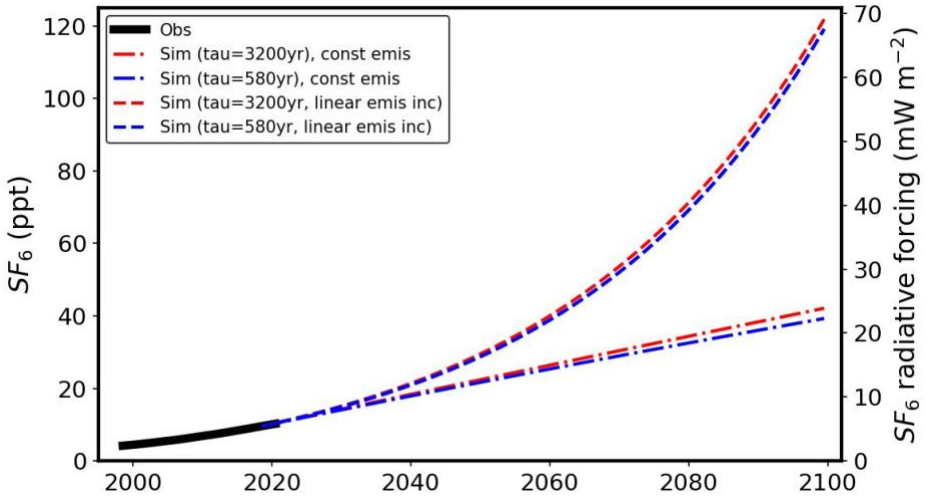

Fig. S1. Global atmospheric SF_6 mole fractions observed by NOAA for 1998 – 2021 and projected to 2100, considering two different atmospheric lifetimes (580 years and 3200 years) and two emission scenarios (a constant global emission of 9 Gg yr^{-1} "const emiss" and a constant emission increase of 0.2 (Gg yr^{-1}) yr^{-1} with an initial global emission of 9 Gg yr^{-1} in 2018 "linear emis inc"). The corresponding radiative forcing is plotted on the right.

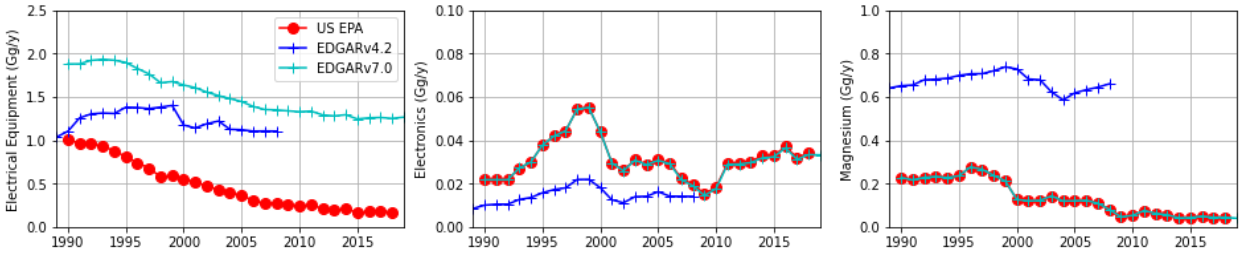

Fig. S2. National total sector emissions reported by the U.S. EPA national greenhouse gas inventory, EDGAR version 4.2 (EDGARv4.2) and EDGAR version 7.0 (EDGARv7.0) for electrical power transformation and distribution, electronics industries, and magnesium production.

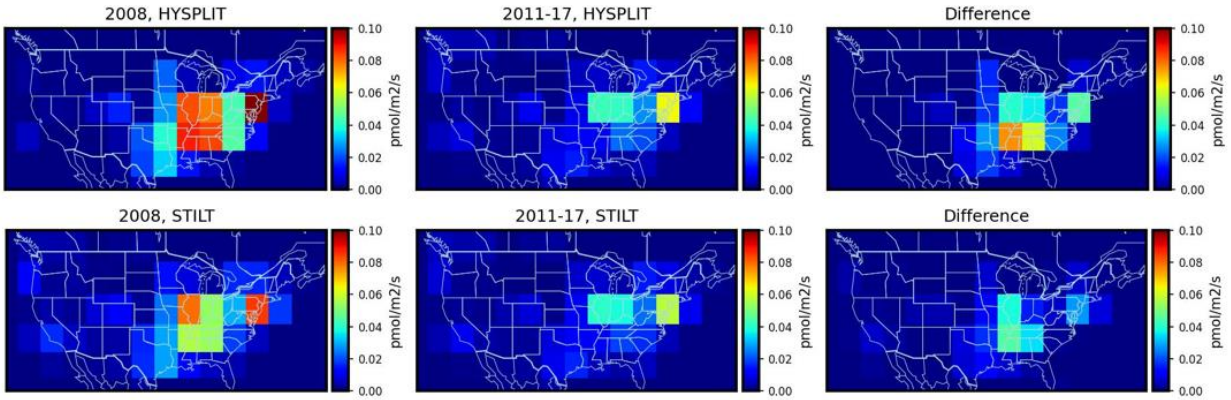

Fig. S3. Emission maps of SF_6 derived from atmospheric observations using two transport models (HYSPLIT-NAMS in upper panels and WRF-STILT in lower panels) for 2008 and 2011- 2017 periods. The third columns indicate emission differences between both periods.

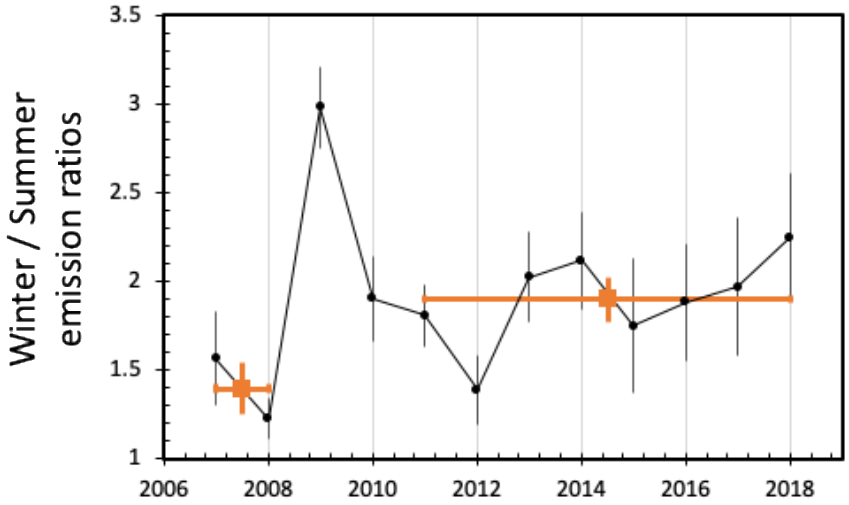

Fig. S4. The winter-to-summer ratios of U.S. national SF_6 emissions between winter (Nov - Feb) and summer (May - Aug) by year, derived from the atmospheric observations. Errorbars represent one standard deviation derived from 12 ensemble members. Orange squares indicate multi-year average ratios with vertical bars indicating one standard error. Horizontal lines indicate years represented.