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Atmospheric Lifetimes and Radiative Forcing of CFC-11 and CFC-12 KENNETH MINSCHWANER, New Mexico Institute of Mining and Technology, LARS HOFFMANN, Forschungszentrum Jülich, ALEX BROWN, University of York, UK, MARTIN RIESE, ROLF MÜLLER, Forschungszentrum Jülich, PETER BERNATH, Old Dominion University — Atmospheric lifetimes for chlorofluorocarbons (CFCs) are important for interpreting their temporal trends and for evaluating their impact on stratospheric chemistry and radiative forcing of climate. The lifetimes of CFC-11 and CFC-12 have been evaluated using global observations of their stratospheric distributions from satellite-based instruments between the period 1992 and 2010. The CFC data sets are from the Cryogen Limb Array Etalon Spectrometer (CLAES), the Cryogenic Infrared Spectrometers and Telescopes for the Atmosphere (CRISTA-1 and CRISTA-2), the Michelson Interferometer for Passive Atmospheric Sounding (MIPAS), and the Atmospheric Chemistry Experiment (ACE). Stratospheric loss rates were calculated using an ultraviolet radiative transfer code with updated molecular cross section and solar irradiance data. Infrared radiative forcings (net flux changes at the tropopause) were determined using CFC distributions from the satellite observations.

Kenneth Minschwaner
New Mexico Institute of Mining and Technology

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