**Initial meteorological conditions and eruption source parameters control on volcanic forcing**

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Studying impacts of past volcanic eruptions on climate and society relies on volcanology, paleo proxies and archaeological records next to climate model simulations. Here we study the control of varying meteorological conditions and eruption source parameters on the volcanic forcing. Simulating explosive tropical and extratropical Northern Hemisphere (NH) volcanic eruptions are carried out by co-injecting sulfur and halogens into the stratosphere with the CESM2(WACCM) model including aerosol, chemistry, climate, and earth system processes. We consider different initial meteorological conditions (El Nino Southern Oscillation, Quasi-Biennial Oscillation, and polar vortex states) and varying eruption source parameters. We are injecting 17 Tg and 200 Tg of SO2 together with scaled halogens, at 24 km altitude and 15° N and 64° N latitude, during January and July pre industrial 1850 conditions. Varying initial meteorological conditions reveal a similar large impact on the volcanic forcing (SO2, SO4, aerosol optical depth, halogens) as varying source parameters for both tropical and NH extratropical eruptions. Our results are compared with available model experiments from MAECHAM5-HAM. Consequences and uncertainties of volcanic forcing and responses to past and future eruptions are discussed.