Net TOA or tropopause irradiance difference between a pair of radiative transfer simulations, one including the forcing agent in question and one without (Hansen et al., 1981). If performed online in an ESM, this is known as a "double [radiation] call" (Chung & Soden, 2015).

Effective radiative forcing (ERF)

Coupled ocean-atmosphere model simulation following an abrupt forcing perturbation. Regression of $\Delta N$ versus $\Delta T$ for each year of simulation. ERF is the intercept of $\Delta N$ at $\Delta T = 0$ (Gregory et al., 2004). An improvement considers non-constancy of climate feedback (Fredriksen et al., 2021).

Fixed sea-surface temperature method

Difference between two atmosphere-only model simulations with prescribed sea-surface temperatures and sea-ice, one including the forcing agent in question and one without (Hansen et al., 2005). Land surface is allowed to freely respond.

Fixed sea- and land-surface temperature method

Difference between two atmosphere-only model simulations with prescribed surface temperatures, one including the forcing agent in question and one without (Shine et al., 2003).