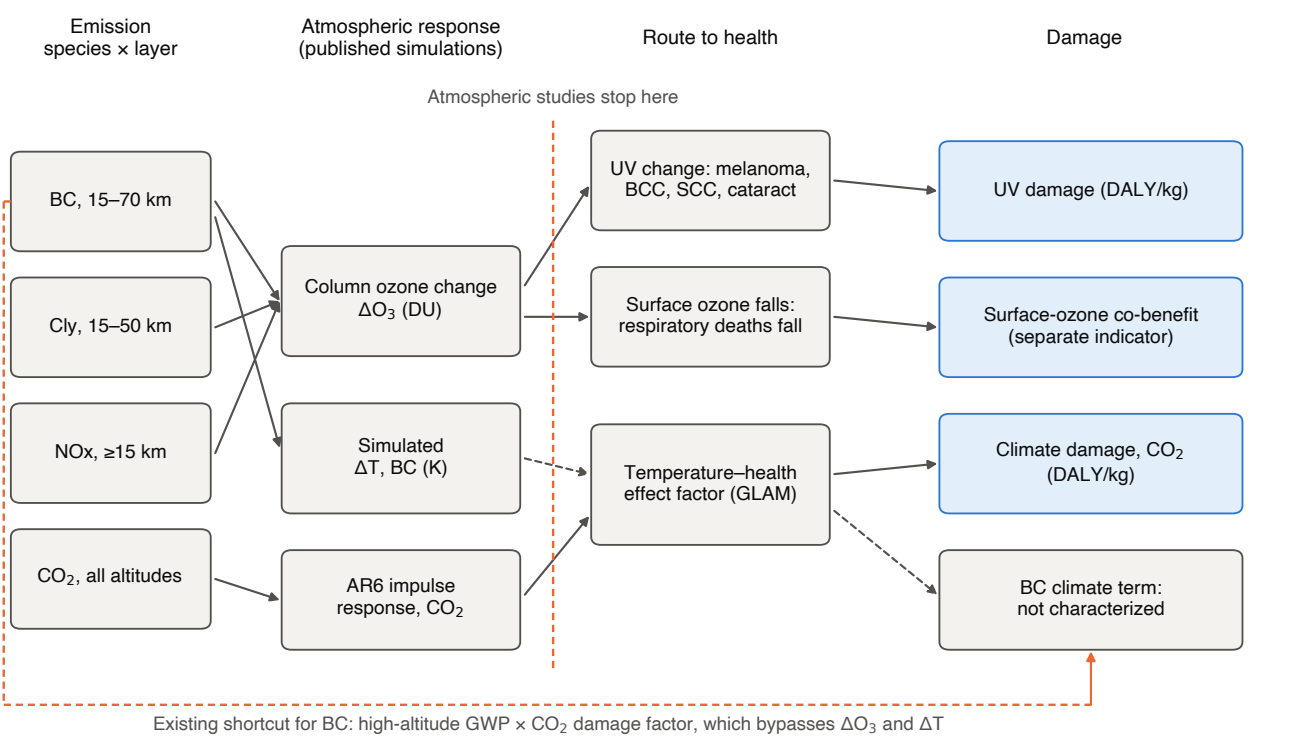

Emission species × layer
Atmospheric response (published simulations)
Route to health
Damage
Atmospheric studies stop here
BC, 15–70 km
Cly, 15–50 km
NOx, ≥15 km
CO_2, all altitudes
Column ozone change ΔO_3 (DU)
Simulated ΔT, BC (K)
AR6 impulse response, CO_2
UV change: melanoma, BCC, SCC, cataract
Surface ozone falls: respiratory deaths fall
Temperature–health effect factor (GLAM)
UV damage (DALY/kg)
Surface-ozone co-benefit (separate indicator)
Climate damage, CO_2 (DALY/kg)
BC climate term: not characterized
Existing shortcut for BC: high-altitude GWP × CO_2 damage factor, which bypasses ΔO_3 and ΔT