



Factors affecting surface air composition on earthlike extrasolar planets

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What factors control the composition of the air on the surface of earthlike exoplanets? Using a photochemical model of the earth we perform sensitivity experiments in which we vary input parameters such as stellar flux and temperature between limits corresponding to the habitable zone of earthlike planets orbiting a solar-type star. An increase in solar flux stimulates the production of pollutants such as ozone (O₃) via the established photochemical "smog" mechanism. Such pollutants are removed mainly via reaction with the hydroxyl (OH) radical (referred to as the 'detergent of the troposphere'). In this contribution we therefore focus on quantifying the influence of the physical conditions on the chemistry of these two key tropospheric species in view of extrasolar terrestrial planet atmospheres.