



Photolysis and kinetic isotope fractionation effects during NO_x cycling

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The photolytic cycling of NO_x is the initiator of tropospheric chemistry and isotope effects may be a new way of understanding NO_x removal by its oxidation to nitric acid. Mass independent isotope compositions are believed to be propagated in the NO_x system by oxidation via ozone. However, our understanding of the role of nitrate radical formation, photolysis effects, and exchange reactions might play is limited. Here we present preliminary data of isotope effects occurring during the Leighton reactions and interpret the results using a photochemical kinetics model and discuss its relevance to tropospheric chemistry and $\Delta^{17}\text{O}$ signals in atmospheric nitrate.