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What is Atmospheric Temperature?

Airborne observations of ozone, temperature and the spectral actinic photon flux for ozone in the Arctic lower stratosphere April-September 1997 and January-March 2000 allow a connection to be made between the rate of production of translationally hot atoms and molecules via ozone photodissociation and the intermittency of temperature. Seen in the context of non-equilibrium statistical mechanics literature results from molecular dynamics simulations, the observed correlation between the molecular scale production of translationally hot atoms and molecules and the macroscopic fluid mechanical intermittency of temperature may imply a departure from Maxwell-Boltzmann distributions of molecular velocities, with consequences for chemistry, radiative line shapes and turbulence in the atmosphere, arising from overpopulated high velocity tails of the probability