



## **Stratosphere-troposphere exchange - a random walk process?**

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Stratosphere-troposphere exchange (STE) plays a key role in the transport of chemical constituents across the atmosphere. Although the processes leading to STE are well documented, the mesoscale, episodic nature of STE makes it challenging to characterise and model globally. It has been suggested in the literature that the overall effect of cross-tropopause mass fluxes may be represented by a simple advective-diffusive model. Here, this idea is discussed using the random walk theory applied to cross-tropopause trajectories driven by ECMWF re-analyses.