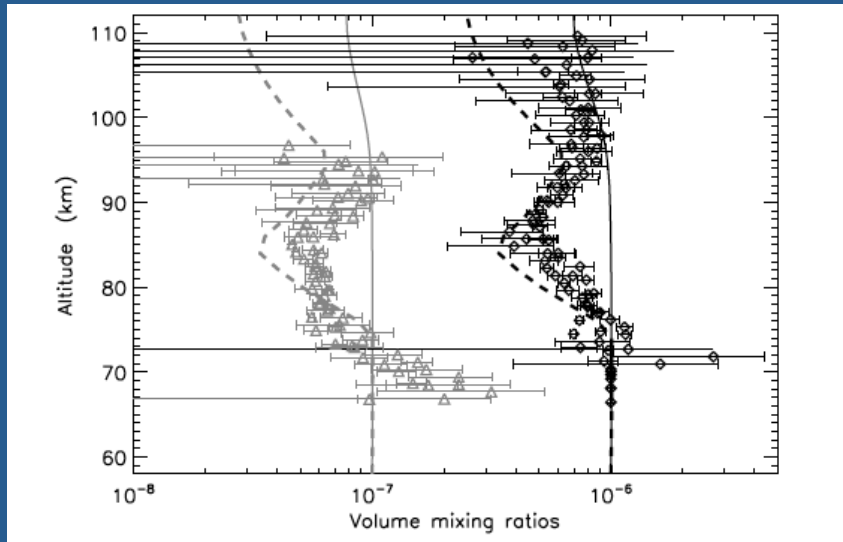
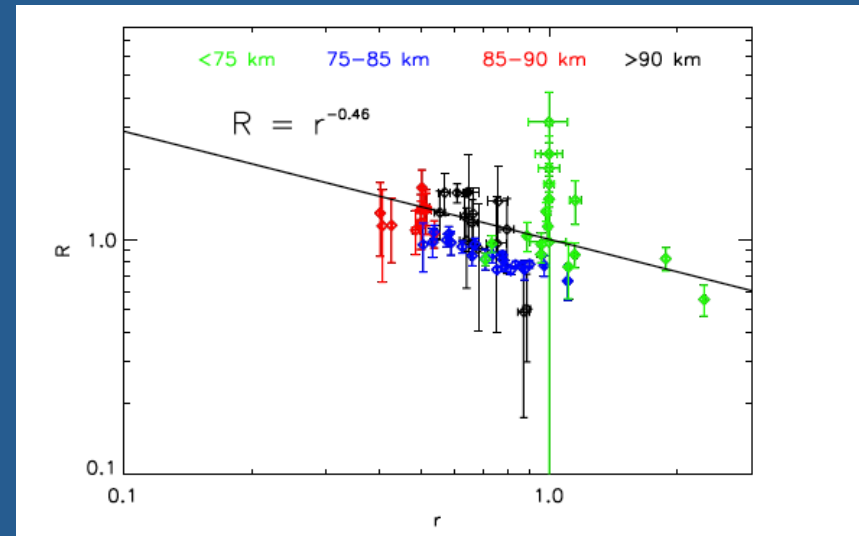


Venus Express (VEx) Results from the SPICAV/SOIR spectrometers



Observations have revealed hitherto unsuspected variations in H₂O (black) and HDO (gray) with altitude. Pronounced minima are observed around 85 km. It is most likely that these features are caused by transport by wind that brings water vapor from regions where there have been enhanced destruction.



Data also revealed pronounced variations in the isotopic ratio of $R = \text{HDO}/\text{H}_2\text{O}$. Attempt to theoretically explain these results implies the destruction of water vapor by photolysis is slightly faster for H₂O than for HDO. Thus, as water vapor is depleted by photolysis, the remaining water vapor will be enriched in HDO (R becomes larger). [Liang and Yung, 2009]