

## NEAR-SATURATION CONDITIONS AT THE TROPICAL TROPOPAUSE: RESULTS FROM TICOSONDE

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Balloon-borne frostpoint measurements have shown a high frequency of supersaturation near the tropical tropopause, and this has been attributed to forced ascent associated with wave motions as well as diabatic heating. Long-term profile statistics are typically presented on altitude, pressure or potential temperature surfaces. For example, at Costa Rica long-term mean values of CFH RH at 16.8 km, the mean annual height of the tropopause, range from less than 60% in July to over 90% in October. While a plot of the annual cycle vs height shows relatively high humidities in the upper troposphere and especially so as one approaches the tropopause, the overall picture is one of subsaturation. A very different picture emerges, however, if the analysis is done in height relative to the tropopause. Here the long-term average of RH at the tropopause is 94% or greater throughout the year. We discuss this paradoxical result in the context of dynamical and cloud processes occurring near the tropical tropopause.