



ANNUAL VARIATIONS OF THE TROPOPAUSE HEIGHT WITHIN METEOROLOGICAL REGIMES

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It has been shown previously that when the atmosphere is classified by meteorological regimes the variability of different atmospheric parameters is greatly reduced within each regime. In particular, total ozone column, its associated profile, and temperature profiles show clear distinct patterns for each regime.

Following this idea, the tropopause height is analyzed for each regime from a thermal and chemical perspective. Satellite data for ozone, water vapor and temperature profiles, as well as global daily rawinsondes for temperature are used to estimate a daily (and later monthly) mean tropopause height. The preliminary results show a much better agreement for the tropopause height, obtained from each quantity and instrument, than previously reported when the atmosphere was not classified by regime. Even more, the atmospheric noise is clearly reduced within each regime as compared to the noise obtained for all data without any discrimination.

The 'cleaner' signal obtained by classifying the atmosphere into meteorological regimes helps to understand the temporal behavior of the tropopause height. Its annual variation shows a different and clear seasonal behavior for each regime.