Issue 6 - Observed refractivity (or delay) vs. retrieved meteorological profiles

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Because it is more closely connected to the measured delay, refractivity has some advantages over derived temperature and humidity profiles. But is refractivity itself a useful climate parameter to monitor? How would one use changes in refractivity as a climate indicator (e.g., indictor of what)? Do any other observing systems depend on precise refractivity data for calibration? Does a time series of refractivity tell us anything useful about the evolution of the climate system?

Response from Kevin Trenberth:
Refractivity is similar to radiances used widely in NWP. Retrievals from radiances alone are no longer used although the MSU channels have been used as a satellite temperature, but with more uncertainty that using refractivity. I think the refractivity could become a benchmark temperature measurement when estimates of humidity from elsewhere are included above about 6 km. Below that level, the confounding influences of water vapor an its uncertainties make refractivity alone the useful quantity, but given that temperature and moisture are positively correlated, a useful index may emerge.

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