

## New Atmospheric Parameters deduced with Meteor radars

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Because of fast, modern computers, it is now easy to identify meteor signals digitized by radars and discriminate them from other impulsive phenomena like lightning, ionospheric signals, and man-made noise. Very specific algorithms have been developed which allow such identification with well over 99% success rates. This has meant that new generations of meteor radars can produce extremely clean (uncontaminated) data sets, which has in turn permitted new procedures to be developed with much greater reliability than in the past.

These new developments have not only allowed better estimates of mesospheric winds, but have also allowed a variety of newer parameters to be determined. Examples including mesopause temperatures, mesopause temperature tides, ambipolar diffusion coefficients, and mesopause pressures. Additional astronomical parameters can also be deduced, including shower radiants, meteor entrance speeds, meteor angles of arrival, and ionic recombination coefficients. The variance in the recombination coefficient (which relates to the variability in metallic composition of meteors) can also be measured.

The principles behind these various techniques, as well as examples of their application, will be discussed and demonstrated.