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Comparison of Wind and STEREO Observations of Dust

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It is now evident that certain impulsive waveforms observed with electric field antennas in space are due to dust impacts. Nevertheless there are still some uncertainties in the interpretation of the data. In particular, STEREO observations have been interpreted as evidence for fast nanodust, submicron sized particle entrained by the solar wind and impacting at solar wind speeds. As there are some features of these STEREO data which are not understood it is important to try to confirm these observations.

Dust is also, unambiguously, observed as impulsive signals on the Wind/Waves antennas. Interstellar dust, identified as dust showing a yearly modulation which peaks when the satellite is moving against the dust stream, is prominent.. We have searched for nanodust, identified as fast (faster than interstellar) dust which does not show a modulation with a period of one year. We do not find evidence of such dust in the Wind data.

Further work to try to understand this difference is underway and will be reported.