

# WIDE LONGITUDINAL DISTRIBUTION OF SOLAR ENERGETIC PARTICLES: OBSERVATIONS AND TRANSPORT MODELING

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Solar energetic particles (SEP) carry fundamental information on the source region and their acceleration and propagation processes. Their intensity-time profiles, anisotropies, energy spectra, and elemental and ionic charge composition are determined by the combined effects of acceleration at the Sun and in interplanetary space, injection time profile, and coronal and interplanetary propagation. However, by the time the energetic particles have reached Earth, the effects of acceleration, release and transport generally cannot be uniquely unfolded when observed with only one spacecraft. It is therefore one of the prime objectives of the dual-spacecraft STEREO mission to address the mechanisms and site of energetic particle acceleration in the low corona and their transport in the interplanetary medium. We report results from multi-spacecraft observations (ACE/Wind with STEREO) for a number of particle events which occurred in the current solar maximum, and present applications of recently developed numerical models to simulate the pitch-angle dependent three-dimensional propagation of energetic particles in the Heliosphere. Based on an investigation of the lateral gradients observed between the various spacecraft we discuss effects of the transport of the particles parallel and perpendicular to the interplanetary magnetic field.