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# Transient IP structures associated with short-period variations in the SEP and GCR flux

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Short-period variations in the integral SEP (>10 MeV) and GCR fluence (>100 MeV), often observed in neutron monitor data have also been seen by the High Sensitivity Telescope (HIST) aboard the Polar Spacecraft. Although HIST was designed to measure radiation-belt electrons, it makes clean measurements of the SEP and GCR fluence when Polar is outside the radiation belts. These extremely high-resolution measurements show variability on a variety of timescales including 0.1 mHz - 1 mHz. We examine these variations from Polar and compare them with energetic particle data from the INTEGRAL spacecraft at large L and with and solar wind IMF and energetic particle observations from Wind and ACE. We find coherent short-term variability occurs when Earth is in close proximity to the HCS and when Earth is either inside an ICME or when an ICME has just transited the Earth. Also, when a flux rope ICME signature is present, the rope axis is nearly parallel to the radial direction and the HCS. Future studies with STEREO will enable detailed 3-D analyses of such solar wind disturbances along spatial scales on the same order of typical SEP and GCR proton gyroradii, which are needed to elucidate the mechanism behind this short-period variability.