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**Wave-particle interactions in the radiation belts: effect of wave spectra** DIMITRIS VASSILIADIS, MATTIAS TORNQUIST, MARK KOEPKE, West Virginia University — Particle acceleration in Earth's radiation belts is often explain in terms of radial diffusion theory. Some of the most important contributions to diffusive transport are stochastic as well as resonant interactions with low-frequency (Alfven/magnetosonic) waves. While spectra of such waves are traditionally assumed to be broadband and spectrally white, a number of recent studies [Rae et al., 2012; Ozeke et al., 2012] indicate that the spectra of ground geomagnetic pulsations are significantly more complex. We examine power-law spectra in particle simulations in a realistic magnetospheric field configuration and report on their effect on the transport and energization of the pre-storm electron population.

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