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On the structure of the radiation belts during quiet times

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In this work, we address the question of the global representation of the radiation belts during the quiet days that follow a storm. We choose to describe the radiation belts according to L-shell, energy, and pitch angle, covering them all simultaneously as the electron flux smoothly decays in the slot region and the outer belt. We will reveal the particularities of the pitch angle dependence that comes from pitch angle diffusion due to whistler mode hiss waves. Discussions will be made thanks to MagEIS measurements (Level 2 to 4) compared with simulations, including] both a 1D reduced Fokker-Planck and a full 3D Fokker-Planck model (the VERB-3D code). A direct and consistent relation between the flux shape and the wave properties will be established. We will show how whistler-mode hiss waves generally have a powerful role in decreasing the flux level in the radiation belts but will also discuss how the spatial distribution of hiss waves is tidily related to plasmaspheric density, with wave power strictly increasing with density for L > 2.5. The latter property is expected to have great implication in our understanding of the role of hiss and, more generally, in radiation belt modeling.