



Characterizing magnetopause shadowing effects on the radiation belt's dynamic: modelling and comparison to observations.

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The dynamic of the Earth's electron radiation belts are mainly governed by internal processes enhanced during period of electromagnetic disturbances. In the framework of the EU-FP7 SPACECAST project, the modelling of many of them has been improved and implemented into the ONERA Salammbô code (radial diffusion, wave-particle interactions, and boundary conditions). Furthermore, the modelling of drop-outs has also been investigated. Such a global magnetospheric process can drastically modify the shape of the outer radiation belts during magnetic storms.

In the present talk, we aim at showing how magnetopause shadowing primarily contributes to drop-outs of > 300 keV electrons in the outer radiation belt. In particular, the impact of the combination of all the improvements conducted during the SPACECAST project are highlighted and compared to recent data.

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