

WAVE-PARTICLE INTERACTIONS IN THE INNER MAGNETOSPHERE

NIGEL P. MEREDITH

British Antarctic Survey, Natural Environment Research Council, Cambridge, UK, email:
nmer@bas.ac.uk

Gyroresonant wave-particle interactions play a major role in the non-adiabatic dynamics of energetic particles in the inner magnetosphere. Such interactions break the first two adiabatic invariants leading to pitch angle scattering and energy diffusion. They play important roles in the acceleration and loss of radiation belt electrons, in the decay of the ring current, as a source of the diffuse aurora, and in heating thermal electrons and ions. In this review I will report on recent work on the generation and global morphology of the waves, and on the theory and modelling of the effects of the waves on the particles. Directions and requirements for future study will also be discussed

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Nigel P. Meredith, British Antarctic Survey, Natural Environment Research Council, Madingley Road, Cambridge, CB3 0ET, UK, tel: +44 (0)1223 221299, fax: +44 (0)1223 362616, email:
nmer@bas.ac.uk