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MI Coupling Processes in the Regions of Diffuse Aurora: Magnetospheric Outlook

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In this talk we present the solution of the Boltzmann-Landau kinetic equation that uniformly describes the entire electron distribution function in the diffuse aurora. The calculation includes the affiliated production of secondary electrons and their energy interplay in the magnetosphere and two conjugated ionospheres. This solution starts with the primary injection of plasma sheet electrons via both electron cyclotron harmonic waves and whistler mode chorus waves to the loss cone, and includes their subsequent multiple atmospheric reflections between the two magnetically conjugated ionospheres. It is demonstrated that magnetosphere-ionosphere coupling is the key element in the formation of electron distribution function in the region of diffuse aurora at the magnetospheric altitudes.