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MHD-PIC Connection Model of Quiet-Auroral Arc Formation Process

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MHD-PIC connection model is developed and applied to Magnetosphere-Ionosphere connection process. The MHD model calculates the feedback instability, which can grow through the resonance between the Alfvén wave in the global magnetosphere and the propagation of electron density wave on the ionosphere, and the PIC model handles the electron acceleration and the ionization in the ionosphere. Here we discuss the growth of the feedback instability and the consequent feature in the ionosphere.