

Visualization of wave-particle interactions by high-speed imaging of aurora

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A variety of wave-particle interactions working in the magnetosphere-ionosphere coupled region and in the magnetosphere cause many different types of fast and fine-scale auroras, such as flickering and pulsating aurora as well as curls and folds. Some compound microstructures have also been found from the cutting-edge optical instrument (Kataoka et al., 2015, EPS Frontier Letter). We review our new challenges of ground-based high-speed imaging observations using EMCCD and sCMOS cameras as a new tool of the visualization of wave-particle interactions to diagnose the local plasma environment.

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