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# Auroral electron dispersion below inverted-V energies: Deceleration and acceleration by Alfv\'en waves

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Sounding rocket observations of auroral arcs often show electron time dispersion signatures associated with auroral activity. The signatures of electron time dispersion that occur simultaneously with and at energies below the primary inverted-V electron precipitation exhibit a variety of characteristics in the dispersion time scale and flux intensity distribution as a function of energy. We present simulation results that illustrate how parameters such as the altitude of the inverted-V potential, wave amplitude and velocity, and parent electron population result in different dispersion features due to resonant acceleration and deceleration of auroral electrons by inertial Alfv\'en waves. Our studies provide a basis to unravel information about Alfv\'en waves, the inverted-V dc potential drop, and the parent electron populations by comparing with the observed dispersion characteristics.