

Abstract Submitted  
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**Spectral Characteristics of Weakly-Collisional Stationary Alfvén Waves**<sup>1</sup> S.M. FINNEGAN, M.E. KOEPKE, West Virginia University, D.J. KNUDSEN, University of Calgary — The spectral properties of weakly-collisional stationary Alfvén (StA) waves are presented. StA waves, stationary electromagnetic structures generated by plasma flow across magnetic field-aligned current sheets, have a stationary parallel electric field structure that can energize electrons along magnetic field lines [Knudsen, **JGR** (1996)]. Knudsen’s model has been generalized to include collisional and thermal effects. Ion-neutral collisions are shown to introduce long-wavelength  $\mathbf{k}$ -space spectral features which produce “quasi-dc” field-aligned electron acceleration for both StIA and stationary kinetic Alfvén (StKA) waves. Ion- neutral collisions are also shown to broaden spectral features, without shifting the dominant perpendicular wavenumber for StIA waves. For StKA waves both ion-neutral and electron collisions broaden spectral features and increase the number of Fourier components. StIA wave spectra and spatial scales are consistent with measurements of dispersive Alfvén wave turbulence observed by various rocket and satellite missions.

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