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Dissipation of Alfvén waves through ion-neutral interactions

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We investigate the ability of ion-neutral interactions to dissipate Alfvén waves in the solar chromosphere. An acoustic driver is used to generate perturbations in a self-similar magnetohydrostatic flux tube model. As these waves travel into the center of the magnetic field concentration, significant energy is dissipated, a factor of 20 higher than the dissipation of static currents. This heating is caused by the damping of magnetic waves, as seen by a decrease in Poynting flux when ambipolar diffusion is included. The dependence of this energy dissipation with resolution, driver amplitude and frequency is studied.