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# Heating and acceleration of ions in non-resonant solar wind Alfvenic turbulence

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We will present one-dimensional hybrid simulations to demonstrate that the low-frequency, finite-amplitude Alfvenic turbulence with broadband spectra can heat protons and heavy ions without the ion-cyclotron resonance. Numerical results show that heating of the ions occurs through the nonlinear Landau damping, even if no distinct parametric instabilities are observed during the dissipation of the Alfvenic turbulence. The wave packets cause not only the parallel heating but also the perpendicular "pseudo" accelerations as a consequence of nonlinear trapping around Alfvenic equilibrium point, resulting in the ion distribution function which is asymmetric with respect to the parallel velocity. The perpendicular energy of ions is much influenced by the spectra and polarizations of Alfvenic turbulence, since the turbulence initially posses transverse energy as given by Walen's relation.

Keywords: solar wond plasmas, Alfvenic turbulence, heating and acceleration of ions