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Alfvén Waves in Hall MHD and Gyrokinetics[1] J. PINO, S.M. MAHAJAN, Inst. Fusion Studies, U. Texas at Austin — It has been shown that the Hall MHD Linear dispersion relation can be obtained by taking the cold ion limit ($T_i \to 0$) in kinetic theory. We take the same limit in the gyrokinetic framework in order to investigate low frequency Alfvén waves. This gives an estimate of electron Landau damping which was not present in the fluid model. Comparisons are made between HMHD, analytical gyrokinetic equations, and computational simulations using the GS2 code. An extension to nonlinear HMHD Alfvén modes is made.

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