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## Obliquely propagating solitons and supersolitons in magnetized three-component plasmas with adiabatic ions and two-temperature electrons

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Large amplitude nonlinear soliton and supersoliton structures are investigated in three-component magnetized plasma models, consisting of inertial adiabatic ions and two-temperature electrons. We determine the existence of nonlinear structures which are propagating obliquely relative to the ambient magnetic field using the Sagdeev pseudopotential formalism in which an energy integral is derived, under the assumption of quasineutrality. We will test the plasma composition and parameter range to establish whether the system supports the existence of supersolitons. The electric fields of such structures have a characteristic wiggled appearance in comparison with regular solitons. We consider first Boltzmann distributions for the cool and hot electrons and then study the effect of nonthermal Cairns and kappa distributions for the hot electrons

**Apply to be considered for a student ; award (Yes / No)?**

No

**Level for award;(Hons, MSc, PhD, N/A)?**

N/A

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