ABSTARCT

Spectra of magnetosonic waves is studied by taking account of spin-up and spin-down electrons as two different fluids. It is found that electron spin effect modifies the dispersions of the perpendicular and obliquely propagating magnetosonic waves even without considering magnetization effect. Further, the consideration of separate spin evolution gives rise to existence of a new spin dependent mode i.e., spin magnetoacoustic mode along with fast and slow magnetosonic modes. It is also noted that spin polarization reduces the wave frequency of spin magnetoacoustic wave and fast magnetosonic wave while the frequency of slow mode is only slightly affected by these effects. The relevance of the present investigation to the dense astrophysical environments is also pointed out.