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COUPLED LOW-FREQUENCY ELECTROSTATIC DRIFT AND ION-ACOUSTIC WAVES PROPAGATED THROUGH (E-P-I) PLASMA WITH SHEARED ION FLOW

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In this paper, the linear and non-linear effects of a coupled low-frequency electrostatic drift and ion-acoustic waves propagated through electron-positron-ion (e-p-i) plasma with sheared ion flow and in the attendance an oblique magnetic field is investigated. The obtained results from linear analysis electrostatic drift and ion-acoustic waves published in (e-p-i) plasma show that these waves owing to the ion sheared flow and oblique magnetic field can be unstable. Besides, it is analysed that we can obtain the non-linear equations governing on the behaviour of electrostatic drift and ion-acoustic waves in weakly interacting regime with vortex solutions consisting of a vortex chain and a double vortex. Moreover, it is shown that when accelerated mode is unstable and for, it leads to maximum value of the growth rate. Furthermore, it is found that oblique magnetic field has a curial role in the dispersion of low-frequency electrostatic drift and ion-acoustic waves published in (e-p-i) plasma. The obtained theoretical results in this article can be applied in coherent non-linear structures in a magnetized (e-p-i) plasma, solar wind plasma and etc.

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