Effects of isothermal ion temperature on dust ion acoustic solitary waves in a dusty plasma obliquely propagating to an external magnetic field

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Effects of isothermal ion pressure on the dust ion acoustic solitary waves(DIASWs) in a dusty plasma, which are obliquely propagating to an external magnetic field, is investigated based on the Sagdeev potential analysis. It is found that the ion temperature increases the speed of the DIASWs, more effectively for a higher value of the directional cosine l_z than the lower one. It is also found that the solutions of DIASWs obtained by expanding the Sagdeev potential $\Psi(n)$ up to δn^3 and δn^4 for a low and high dust charge density values as was done in a previous study (Choi *et al.* 2004) show different behaviors with respect to the increase of the ion temperature. The width and height of double layers(DLs) solution are found to decrease as the ion temperature increases.