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**Fundamental mode of ultra-low frequency electrostatic dust-cyclotron surface waves in a magnetized complex plasma with drifting ions** SEUNGJUN LEE, MYOUNG-JAE LEE, Department of Physics, Hanyang University — The electrostatic dust-cyclotron (EDC) waves in a magnetized dusty plasma was reported that they could be excited by gravity in a collisional plasma [1]. Rosenberg suggested that EDC waves could be excited by ions drifting along the magnetic field in a collisional plasma containing dust grains with large thermal speeds [2]. The existing investigations, however, focus on EDC volume waves in which the boundary effects are not considered. In this work, we attempt to obtain some physical results concerning the fundamental mode of EDC surface wave and the stability of wave by utilizing a kinetic method. The EDC surface wave is assumed to propagate along an external magnetic field at the interface between the plasma and the vacuum. The plasma is comprised of drifting ions flowing along an external magnetic field. To derive the growth rate of surface waves, we employ the specular reflection boundary conditions. The EDC surface wave is found to be unstable when the ion drift velocity is larger than the phase velocity of the wave. In addition, the wave becomes to be more unstable if dust particles carry more negative charges.

[1] N. D'Angelo, Phys. Lett. A 323, 445 (2004).

[2] M. Rosenberg, Phys. Scr. 82, 035505 (2010).

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