Dust particle rotation mechanisms in a glow discharge under the magnetic field action and their role in different ranges of magnetic field values

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As is known, the main mechanisms of dust particle rotation in a glow discharge are ion drag and neutral gas drag. The ion drag results in a counterclockwise rotation of the dust structure if viewed in the direction of the magnetic field. The neutral gas drag rotates the dust structure in the opposite direction; this mechanism works if the dust structure is located at the striation head, where there is a region of the dust particle stable equilibrium. It is associated with the appearance of eddy currents in the striations and becomes predominant in magnetic fields $B \gtrsim 0.1$ T. In this communication, we discuss the role of these mechanisms in different magnetic field ranges and under different conditions.