

Effect of the Levitation Screen Sizes on Magnetic Parameters of Tracking System

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Abstract : Analytical expressions for inductances, current, ampere-turns, excitation winding, maximum width, coordinates of the levitation screen (LS) are derived for the calculation of electromagnetic devices based on tracking systems with levitation elements (TS with LS). Taking into account the expression of the complex magnetic resistance of the screen, the dependence of the screen width on the heating temperature of the physical and technical characteristics of the screen material and the relationship of the geometric dimensions of the magnetic circuit is established. Analytic expressions for a number of functional dependencies characterizing complex parameter relationships in explicit form are obtained and analyzed.

Keywords : tracking systems, levitation screens, electromagnetic levitation, excitation windings, magnetic cores, defining converter, receiving converter, electromagnetic force, electrical and magnetic resistance

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