

– gyroradius to exp. size:

$$\frac{\rho}{L} \sim \frac{a^2 v_d}{BL} \ll 1$$

– gyrofreq. to collision freq.:

$$\frac{\omega_c}{v_{dn}} \sim \frac{B}{aP} > 1$$

– magnetic to gravitational force:

$$\frac{F_m}{F_g} = \frac{Q_d v_d B}{m_d g} \sim \frac{v_d B}{a^2} \geq 1$$