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Dynamics of Charged Dust Particle near Conducting Wall in TOKAMAK[1] JUSTIN ANGUS, SERGEI KRASHENINNIKOV, UCSD — A substantial amount of dust has been observed to be present near the first walls of fusion devices. The impact of dust on plasma parameters in current and future fusion devices is not clear and may cause a significant safety threat. It is therefore important to understand the dynamics of dust particles after formation. A surface charge is induced on the wall of a conducting material in the presence of a charged particle. The charged particle is then attracted to the wall by this induced charge causing the charge in the wall to redistribute and thus increasing the force of attraction further. In this work we study the dynamics of this attraction and the dissipation of electromagnetic energy via joule heating within the conducting wall.

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Justin Angus
UCSD

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