

Abstract Submitted
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First passage problem of dust charge fluctuations¹ BABAK SHOTORBAN, Univ of Alabama - Huntsville — Starting from a given grain charge, how long does it take for the grain to reach a specified charge? The answer is concerned with the first passage problem, which is of particular interest in systems with metastable fluctuations with two or more macrostates (Van Kampen 2007). A recent study (B. Shotorban Phys. Rev. E 92, 043101) shows that grain charge fluctuations could be metastable when the secondary electron emission (SEE) mechanism is active. The first-passage time in the grain charging system is investigated and discussed for various scenarios. Specially, the time scales associated with the transition of the system from one macrostate to another are characterized for metastable fluctuations.

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