Abstract Submitted
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Reversal of microparticle motion at the onset of polarity switching in ground-based PK-4 experiments[1] N FERRIS, L SCOTT, E THOMAS, U KONOPKA, Auburn University, J WILLIAMS, Wittenberg University, M PUSTYLNIK, H THOMAS, DLR — Due to microparticles' large mass relative to ions and electrons, gravity plays an important role in complex/dusty plasmas. In order to isolate the role of interparticle forces from the dominating role of gravity, several complex plasma experiments have thus been performed under microgravity conditions on the International Space Station over the last two decades. The current experiment, PK-4, produces flowing complex plasma in a dc discharge plasma. A periodic oscillation of this electric field referred to as "polarity switching" is used to trap the particles in the plasma. This presentation discusses the differences between microgravity and ground experiments, the observations of spatial variances in the paths of dust grains at the onset of polarity switching and provides insights into the forces that are acting on the particles.

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