

Abstract Submitted
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Dispersion relation of Dust-acoustic waves in three-dimensional complex plasmas under microgravity SILVIA V. ANNIBALDI, Space-and Plasma Physics, EE, KTH, SE-10044 Stockholm, Sweden, A.V. IVLEV, U. KONOPKA, Max-Plank-Institut fur Extraterrestrische Physik, D-85741 Garching, Germany, S. RATYNSKAIA, Space-and Plasma Physics, EE, KTH, SE-10044 Stockholm, Sweden, H. THOMAS, G. MORFILL, Max-Plank-Institut fur Extraterrestrische Physik, D-85741 Garching, Germany, A. LIPAIEV, V. MOLOTKOV, O. PETROV, V. FORTOV, Institute for High Energy Density, RAS, 125412 Moscow, Russia, J. DRAKE, Alfvén Laboratory, EE, KTH, SE-10044 Stockholm, Sweden — In order to measure the dispersion relation for longitudinal Dust-acoustic (DA) waves in quasi-isotropic 3D complex (dusty) plasmas, a series of dedicated experiments with the PKE-Nefedov [1] setup were performed on board the International Space Station. The waves were excited by applying ac electric modulation of variable frequency to the rf electrodes. The amplitude of excitation was varying with frequency to ensure “sufficiently linear” regime of the dust density perturbations. The dispersion relation was obtained by measuring the induced density perturbations, revealing fairly good agreement with a simple multispecies theory of DA waves [2]. [1] Nefedov A P et al, 2003, New. J. Phys., vol. 5, 33.1. [2] Rao N N et al, 1990, Planet. Space Sci., vol. 38, 543.

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