

Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

Ion response in a magnetized flowing plasma¹ HANNO KÄHLERT, JAN-PHILIP JOOST, PATRICK LUDWIG, MICHAEL BONITZ, Christian-Albrechts-Universität zu Kiel, ITAP — We investigate the influence of an external magnetic field on streaming ions in a dusty plasma. The magnetic field is chosen parallel to an external electric field, which accelerates the ions and gives rise to a non-Maxwellian distribution function [1]. The ion susceptibility is derived from a kinetic equation, where ion-neutral collisions are taken into account via a Bhatnagar-Gross-Krook collision term. The properties of the response function and the angular dependence in the anisotropic plasma are discussed. The modified ion response significantly changes the effective interaction between the dust particles. Here, we use the response function to study the influence of magnetized flowing ions on the dispersion of dust density waves and compare the screened dust potential with calculations based on a shifted Maxwellian distribution [2]. [1] A. V. Ivlev, S. K. Zhdanov, S. A. Khrapak, and G. E. Morfill, Phys. Rev. E **71**, 016405 (2005)

[2] J.-P. Joost, P. Ludwig, H. Kählert, C. Arran, and M. Bonitz, submitted for publication, arxiv.org/abs/1407.1645

¹We acknowledge financial support from the DFG via SFB-TR24, projects A7 and A9.

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Date submitted: 11 Jul 2014

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