Abstract Submitted
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Nonlinear magnetoplasmons in strongly coupled Yukawa and Coulomb plasmas[1] TORBEN OTT, MICHAEL BONITZ, Institute of Theoretical Physics and Astrophysics, University Kiel, ZOLTAN DONKÓ, PETER HARTMANN, Research Institute for Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest — The wave spectra of magnetized and strongly coupled 2D-Yukawa plasmas have recently been computed numerically [1]. Good agreement between existing theories and the simulation was found. The magnetized Yukawa plasma sustains two modes, the magnetoplasmon and the magnetophonon, the frequencies of which are of the order of the Einstein or cyclotron frequency. In this contribution, we report on the existence of additional high-frequency plasma oscillations at multiples of the magnetoplasmon, based on extensive molecular dynamics simulations. The emergent modes are reminiscent of the well-known Bernstein modes but are renormalized by the strong interparticle correlations. We present detailed numerical results and an analytical explanation of the observed features [2].

[1] Hou *et al.*, Phys. Plas., **16**, 73704 (2009)
[2] Bonitz *et al.*, Phys. Rev. Lett., in print (2010)

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