Abstract Submitted
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Dipolar dark solitons KAZIMIERZ RZAZEWSKI[1], Center for Theoretical Physics PAN — We study dark soliton-like excitations in the BEC dominated by long range dipolar forces. We do it in a one dimensional ring geometry, in a 1D and 3D elongated harmonic trap. We show that these solitons interact at a distance and undergo inelastic collisions. We also show that in the harmonic trap, in contrast with solitons in the contact interacting gas, the oscillation frequency depends on the strength of interaction. We also determine the boundary of stability of these excitations.

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