

Abstract Submitted  
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**Charge transfer in cold collisions of  $\text{Be}^+ + \text{Be}^1$**  MARKO GACESA, ROBIN CÔTÉ, University of Connecticut - Storrs — We study charge transfer in collisions of cold  $\text{Be}^+$  and  $\text{Be}$  in an external magnetic field. The atom-ion interaction is modeled by high-level *ab-initio* potential energy curves, including the dipole-dipole terms, as well as Zeeman and hyperfine couplings. The scattering calculations are performed for a range of experimentally accessible magnetic fields and different initial hyperfine states using fully-quantum coupled channel formalism. We report detailed inelastic and charge-exchange cross sections for different isotopes of  $\text{Be}$ . In addition, we predict a number of magnetic Feshbach resonances and discuss their applications on controlled charge transfer in cold quantum gases and optically trapped systems.

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