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Two-body Coulomb resonances in magnetic field D. VRINCEANU, L. A. COLLINS, Los Alamos National Laboratory — Unlike Coulomb scattering in a zero magnetic field, temporary bound states can form at positive energy in electron-proton collisions in a magnetic field. Classical trajectory simulations are used to explore the phase space for typical parameters used in anti-hydrogen experiments. These resonances can increase the interaction time substantially and have important consequences on three-body recombination in cold magnetized plasma. Standard scattering theory has to be modified to take into account that the free particle states are not plane waves in a magnetic field.

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