Magnetic multipole induced zero-rotation frequency bounce-resonant loss in a Penning-Malmberg trap used for antihydrogen trapping\(^1\) JOEL FAJANS, U.C. Berkeley, ALPHA TEAM — In many antihydrogen trapping schemes, antiprotons held in a short-well Penning-Malmberg trap are released into a longer well. This process necessarily causes the bounce-averaged rotation frequency \(\Omega_r\) of the antiprotons around the trap axis to pass through zero. In the presence of a transverse magnetic multipole, experiments show that many antiprotons (over 30\% in some cases) can be lost to a hitherto unidentified bounce-resonant process when \(\Omega_r\) is close to zero. The results of these experiments will be presented, as well as an analytic model and numeric simulations

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