

Abstract Submitted  
for the APR10 Meeting of  
The American Physical Society

**Electric Polarizability In Lattice QCD** MICHAEL LUJAN, FRANK LEE, ANDREI ALEXANDRU, The George Washington University — We study the electric polarizability of neutral and charged particles using lattice QCD techniques with standard Wilson fermions. The background field method is used for introducing the electric field onto the lattice. The calculations are carried out using quenched configurations with 6 different pion masses and 4 different fields. The polarizabilities are extracted from small mass shifts. The charged particles are more challenging than neutral particles because they accelerate in the electric field. We investigate several methods for isolating the signal for charged particles. The methods are checked by using test data generated from the known functional form of the two-point correlation function for charged scalar particles [1]. We will report results for a variety of mesons and baryons.

[1] W. Detmold, B.C. Tiburzi, A. Walker-Loud, Phys. Rev D79 094505 (2009)

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Date submitted: 22 Oct 2009

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