

Abstract Submitted
for the APR09 Meeting of
The American Physical Society

Study of alpha particle scattering by nuclei using the Klein-Gordon equation. JEREMY SCOTT, F. BARY MALIK, Southern Illinois University at Carbondale — The calculations of scattering cross sections of alpha particles on target nuclei using the Klein-Gordon equation will be presented. Analytical problems for including Coulomb potential in the treatment will be discussed and has been resolved in the new code. Calculations done by this code are compared to those performed in using a relativistic version of the Schrodinger equation for the scattering of 1.37 GeV alpha particles by calcium. Differences in the calculations require the use of a new potential in the Klein-Gordon equation. Since data points exist only in the forward angles, more experiments in the larger angles are required to realize a better understanding of the nuclear potential.

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Date submitted: 09 Jan 2009

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