

Dirac Optical Potential of p-¹⁴Be and Pronounced " Long-Tail " Shape

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Abstract: The Dirac optical potential for p-¹⁴Be elastic scattering is evaluated by the relativistic impulse approximation. Each of the real part and the imaginary part of the potential shows a pronounced " long tail " for the proton elastic scattering from halo nucleus ¹⁴Be compared with the potentials for proton scattering from its adjacent nuclei ¹²C and ¹⁶O, which do not have halo structures. This kind of " long tail " phenomenon suggests another signature for halo nuclei.

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