

Abstract Submitted
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Inverse Scattering/ Inversion of Gamow's Formula SOHANG GANDHI¹, University of Central Florida — Classically it is impossible for a particle to penetrate a potential barrier exceeding its energy. In quantum mechanics, however, there is always a finite probability for such an occurrence. The transmission probability is given by Gamow's formula:

$$T(E) = e^{-\frac{2}{\hbar} \int_{x_1(E)}^{x_2(E)} \sqrt{2m(V(x)-E)} dx}, \quad (1)$$

where $V(x)$ is the potential, E the particles energy, and x_1 and x_2 are the classical reflection points. $T(E)$ can typically be easily obtained through experiment. However, the task of determining $V(x)$ is often more difficult. Hence, the inversion of Gamow's formula would provide a tool for probing physical structure. Procedures for doing so and results obtained shall be discussed.

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