

The correction to the Fermi's golden rule: implication to particle physics and cosmology

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The transition probability $P(T)$ at the finite time interval, T , is determined by the wave functions and behaves as $P(T) = \Gamma T + P^d$, where Γ is derived from the golden rule and P^d is the correction term. P^d has been considered negligible since Dirac's time, but it was found recently that is not so, by series of studies of the present author and his collaborators. P^d has origin in many-body interaction energy, and has intriguing properties. It gives sizable effects in wide area, which are similar to background, and has not been paid attention by researchers. Origins and peculiar properties of P^d are explained, and some implications to particle physics and cosmology are given.

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