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Decay probabilities in the multichannel case

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In the context of an unstable state with more than a single decay channel, we present a novel and general formula for evaluating the decay probabilities in each open decay mode. We also discuss numerical examples in Quantum Mechanics (QM) and Quantum Field Theory (QFT). Just as for the survival probability p(t), these partial decay probabilities are also not exponential and their ratio turns out to be not a simple constant, as it would be in the exponential limit. Quite remarkably, these deviations may last relatively long, thus making them potentially interesting in applications.

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