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Finite Temperature Effects on Particle Decays

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At high densities and temperatures the standard quantum field theoretical approach to particle physics must be modified. Temperature enters explicitly in observables, for instance in decay rates, and, under certain conditions, expected results deviate significantly from the case of zero-temperature. I have put together a collection of thermal decay rates covering scalars, pseudoscalars and fermions consequently expanding the existing literature. I aim to introduce the procedure of thermal calculations and point out how temperature enters theory, specifically in the two-point correlation function. I also show calculated thermal effects on decay rates in comparison with the zero-temperature ditto.

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