

Thermal regularization of t -channel singularities of scattering processes

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In this talk, I will discuss the so-called t -channel singularities that may occur when a given t -channel scattering process is mediated by a massive, stable particle on its mass shell.

After providing conditions for the singularity to occur and presenting several examples of SM and BSM processes afflicted by the issue, I will describe a regularization method based on thermal field theory.

Taking into account interactions between the t -channel mediator and the environment allows to assign an effective decay width to the mediator. Consequently, the singularity can be regularized using a resummed propagator.

Author: IGLICKI, Michał (University of Warsaw)

Presenter: IGLICKI, Michał (University of Warsaw)

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