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Thermodynamics from the S-matrix reloaded

Tuesday 3 December 2024 17:30 (15 minutes)

Over the past decade and more, S-matrix-based calculational methods have experienced a resurgence, proving to be both an elegant and powerful tool for extracting physical quantities without the need for an underlying Lagrangian formulation. In this seminar I will critically review the formalism introduced by Dashen, Ma, and Bernstein, which connects the thermodynamics of relativistic systems to the information contained in their scattering amplitudes. In revising the computation of the QCD equation of state to leading order in the strong coupling, I will showcase the advantages of this method over traditional Thermal Field Theory techniques.

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