

Compton scattering in TFD formalism

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Compton scattering is a crucial process in quantum electrodynamics, involving the interaction between an electron and a photon through a virtual electron. In this study, we calculate the cross-section for this scattering process at finite temperature. To explore thermal effects, we employ the Thermo Field Dynamics (TFD) formalism, a real-time approach to quantum field theory at finite temperature. Our results demonstrate the increasing relevance of thermal effects as the temperature rises. It is known that two real-time approaches, TFD and closed-time path, exist for incorporating temperature effects into quantum field theory. Consequently, we provide a comparison between the results obtained using TFD and the closed-time path formalism.