

Two-Point Function Reduction of Four-Point Amputated Functions and Transformations in \overline{FF} and RA Basis in a Real-Time Finite Temperature NJL Model

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Abstract: Based on a general analysis of Green functions in the real-time thermal field theory, we have proven that the four-point amputated functions in an NJL model in the fermion bubble diagram approximation behave like usual two-point functions. We expound the thermal transformations of the matrix propagators for a scalar bound state in the \overline{FF} basis and in the RA basis respectively. The resulting physical causal, advanced and retarded propagators are respectively identical to corresponding ones derived in the imaginary-time formalism, and this shows once again the complete equivalence of the two formalisms of thermal field theory on the discussed problem in the NJL model.

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Key words: NJL model, real-time thermal field theory, four-point amputated functions, two-point function reduction

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