Talk 20: 10:15–

HEISENBERG MACHINE: A Numerical Method for ESR Spectrum of Strongly Correlated Systems at Finite Temperatures

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We introduce an efficient and numerically stable method for calculating ESR spectrum of strongly correlated systems at finite temperatures[1]. The method is a combination of numerical solution of the time-dependent Schrodinger equation[2], random vector representation of trace[3], and Chebyshev polynomial expansion[4] of Boltzmann operator. This method should be very useful for a wide range of strongly correlated quantum systems at finite temperatures [5]. If we have time, we will introduce HEISENBERG MACHINE, a GPU cluster for this numerical method, which is now under construction.

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