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Statistical Average of Spin Operators for Calculation of Three-Component Magnetization

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Abstract: When one wants to calculate all the three components of magnetization of Heisenberg model under random phase approximation, at least one of the components should be the solution of an ordinary differential equation. In this paper such an equation is established. It is argued that the general expressions of magnetization for any spin quantum number S suggested before are the solution of the ordinary differential equation.

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