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Berezin's quantization approach for determining the ladder operators associated to a movement particle on the circle and sphere

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Abstract

The quantum formulation of a physical system is essentially based on the associated creation and annihilation operators. In this article, we introduce these ladder operators for a movement particle on the circle and 2-dimensional sphere by Berezin's quantization. This approach is derived from the resolution of the unity condition in coherent states. In other words, the coherent states provide a straight forward quantization scheme from a classical state to corresponding quantum state. In this article, we study the coherent states of these systems from heat kernel function point of view.

Keywords: coherent states, Berezin's quantization, creation operator, annihilation operator

For full article, refer to the Persian section