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Partition function of the harmonic oscillator on a noncommutative plane

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**Abstract:** We derive the partition function of the one-body and two-body systems of classical noncommutative harmonic oscillator in two dimensions. Then, we employ the path integral approach to the quantum noncommutative harmonic oscillator and derive the partition function of the both systems at finite temperature.

**Key Words:** Harmonic oscillator, noncommutaty, two-body

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