

Quantum Physics

On the Fermi Function of Squeezed Coherent States

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Fermi observed in 1930 that the state of a quantum system may be defined in two different (but equivalent) ways, namely by its wavefunction Ψ or by a certain function g_F on phase space canonically associated with Ψ . In this Note we study we study Fermi's function when Ψ is a squeezed coherent state. We relate it with the Wigner transform of Ψ , thus generalising a previous observation of Benenti and Strini. We show that the symplectic capacity of the phase space ellipsoid $g_F(x,p) \leq 0$ is bounded by $h/2$ and $nh/2$ (n the number of degrees of freedom).

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