

**Aragone, C.; Zypman, F.**

**Supercoherent states.** (English) Zbl 0626.58041

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We present the supercoherent states. They are introduced as the eigenstates of the supersymmetric annihilation operator of the quantum mechanical supersymmetric harmonic oscillator. They have a compact expression in terms of the standard (bosonic) coherent states. For each value of the complex parameter  $z$  we now have two linearly independent orthogonal supercoherent states. One of them has pure fermionic character and is the more classical, while the other is fully supersymmetric (i.e. the mean value of the Klein operator when the system is set in this state vanishes). There are no purely bosonic supercoherent states. The supercoherent fermionic states saturate both the Heisenberg uncertainty relation and the new entropic uncertainty recently introduced by Deutsch, while the supersymmetric ones almost (but not exactly) make it. They give a classical (or almost classical) mean value for the energy of the system and do not spread along their time evolution.

**MSC:**

**58Z05** Applications of global analysis to the sciences

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