

**Capolupo, Antonio; Di Mauro, Marco; Iorio, Alfredo**  
**Mixing-induced spontaneous supersymmetry breaking.** (English) Zbl 1252.81096  
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Summary: It is conjectured that flavor mixing furnishes a universal mechanism for the spontaneous breaking of supersymmetry. The conjecture is proved explicitly for the mixing of two chiral  $N=1$  supermultiplets and arguments for its general validity are given. That is an instance of the O’Raifeartaigh Lagrangian for which there is no tree-level nor perturbative breaking. Nonetheless, the dynamical breaking occurs due to the vacuum condensate, a mixing-induced nonperturbative effect that lifts the zero point energy.

**MSC:**

[81T10](#) Model quantum field theories  
[81T60](#) Supersymmetric field theories in quantum mechanics  
[81R40](#) Symmetry breaking in quantum theory  
[37A25](#) Ergodicity, mixing, rates of mixing

Cited in 4 Documents

**Keywords:**

quantum field theory; symmetry breaking; supersymmetry; mixing of particle

**Full Text:** [DOI](#) [arXiv](#)

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