## 2003 Vol. 40 No. 5 pp. 543-546 DOI:

Dynamically Broken Supergauge Symmetries

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Abstract: The dynamical breaking of the supergauge symmetries in the massless supergauge Wess-Zumino model is discussed without adding the Fayet-Iliopoulos term to the Lagrangian. It is shown, in terms of the Nambu-Jona-Lasinio mechanism, that the supersymmetry breaking and the gauge symmetry breaking can be realized dynamically. It is also shown that the dynamical breaking moves the vacuum expectation values of two scalar fields away from zero. In order to restore the symmetry of the vacuum, one of the two scalar fields is translated and at the same time the mass spectrum is changed too.

PACS: 11.30.Pb, 11.30.Rd, 11.30.Qc Key words: supersymmetry, dynamical breaking

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