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Spontaneous Parity Breaking and Metastable Supersymmetry Breaking Vacua : cosmological constraint

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We study cosmology in a model with spontaneous parity breaking in the context of metastable supersymmetry breaking vacuum. We point out that such a mechanism leads to parity violation only locally, leading to the formation of a network of domain walls. We show that conflict with observed cosmology can be avoided through Planck scale suppressed terms, provided the parity breaking scale is constrained to remain smaller than about $10^{10} - 10^{11}$ GeV. We also study the compatibility of this requirement with the possibility of B-L gauge symmetry at the scale of a few TeV.

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