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SUSY in the Light of B Physics and Electroweak Precision Observables

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Indirect information about the possible scale of SUSY breaking is provided by
B-physics observables (BPO) as well as electroweak precision observables (EWPO). We
combine the constraints imposed by recent measurements of the BR(b -> s gamma),
BR(B_s -> mu mu),
BR(B_u -> tau nu_tau) and Delta M_B_s BPO with those obtained
from the experimental measurements of the MW, sinˆ2 theta_eff, Gamma_Z, (g-2)_mu and
Mh EWPO,
incorporating the latest theoretical calculations of these observables within the
Standard Model and supersymmetric extensions.
We perform a χ^{2}ˆfit to the parameters of the constrained minimal
supersymmetric extension of the Standard Model (CMSSM) and the
non-universal Higgs model (NUHM).
Assuming that the lightest supersymmetric particle (LSP) provides the
cold dark matter density preferred by WMAP and other cosmological data,
we scan over the remaining parameter space.
Within the CMSSM, we confirm the preference found previously for a
relatively low SUSY-breaking scale, though there is some tension between
the EWPO and the BPO.
In studies of some specific NUHM scenarios compatible with the cold dark
matter constraint we investigate MA-tan_beta planes and
find preferred regions that may have values of χ^2 somewhat lower
than in the CMSSM.
The implications for phenomenology at the Tevatron, the LHC and the ILC are discussed.

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