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The ILC as a natural SUSY discovery machine and precision microscope: from light higgsinos to tests of unification

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How LHC tells us that there is excellent potential for ILC to discover new particles
Data from LHC confirm the existence of a very SM-like Higgs boson
at 125 GeV.
However, it is hard to understand the existence of such a particle
state when its mass is unstable under quantum corrections.
Supersymmetry tames the quantum divergences and the h(125) mass falls
squarely within the narrow SUSY predicted window.
To avoid an unnatural Little Hierarchy within the MSSM,
higgsinos with mass not too far from m(W,Z,h)~100 GeV are required.
Other sparticle contributions to the weak scale are all loop suppressed
and can occur at the several TeV scale with little cost to naturalness.
While light higgsinos are difficult to see at LHC,
they would easily be discovered at ILC with rs>2m(higgsino).
Such light higgsinos are consistent with a SUSY DFSZ solution to the
strong CP problem which also solves the SUSY mu problem and admits a hierarchy
mu«m(sparticle). Dark matter is expected to be a wimp/axion admixture.
Radiative corrections drive unnatural high scale soft terms to natural
values at the weak scale giving rise to barely broken EW symmetry.
Such a scenario seems to be required by the
string theory landscape which favors large soft terms and a weak scale
not too far from 100 GeV.
Sparticle mass predictions from the landscape are also shown.

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