

Abstract for an Invited Paper  
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**SIM(2), CP, SUSY, and Gravity**

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The proposal of Cohen and Glashow that the laws of physics in flat spacetime need be invariant only under the SIM(2) subgroup of the Lorentz group is extended to include SUSY and gravity. N=1 SUSY gauge theories are formulated which include SIM(2) fermion couplings. These theories contain two conserved supercharges rather than the usual four. The extension to supergravity, although incomplete, suggests constraints on the null field  $n^{\mu(x)}$  which replaces the constant null vector  $\bar{n}^{\mu}$  of the flat space theory. Modified constraints are then incorporated in a consistent non-SUSY gravitational theory. SIM(2) effects necessarily break CP and Lorentz symmetry. The new ideas suggest that the symmetry breaking is associated with a null geodesic congruence which pervades spacetime. Food for thought.