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On a new democratic formulation of type 2B superstring theory

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The dualization of the scalar fields of a theory into (d-2)-form potentials preserving all the global symmetries is one of the main problems in the construction of democratic pseudoactions containing simultaneously all the original fields and their duals. We study this problem starting with the simplest cases and we show how it can be solved for scalars parametrizing Riemannian symmetric sigma-models as in maximal and half-maximal supergravities. Then, we use this result to write democratic pseudoactions for theories in which the scalars are non-minimally coupled to (p+1)-form potentials in any dimension. These results include a proposal of democratic pseudoaction for the generic bosonic sector of 4-dimensional maximal and half-maximal ungauged supergravities. Furthermore, we propose a democratic pseudoaction for the bosonic sector of N=2B,d=10 supergravity (the effective action of the type IIB superstring theory) containing two 0-, two 2-, one 4-, two 6- and three 8-forms which is manifestly invariant under global SL(2,R) transformations.

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