



Superfield equations for the interacting system of D=4 N=1 supermembrane and scalar multiplet

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We present the superfield action for the dynamical N=1 D=4 supermembrane in interaction with a dynamical scalar multiplet and use it to derive the superfield equations of motion. These include the supermembrane equations, which formally coincide with equations of supermembrane in a background of the (off-shell) scalar multiplet, and the special chiral superfield equations with supermembrane source. In the case when the scalar supermultiplet part of the action contains only the simplest kinetic term we have also extracted the spacetime component field equations from the superfield equations and solve these in the leading order on supermembrane tension.

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