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On action and properties of 10D multiple D0-brane system

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We present an action for the dynamical system of N nearly coincident multiple D0-branes and strings connecting these D0-branes (mD0 system) which is invariant under spacetime (type IIA target superspace) supersymmetry and the local worldline supersymmetry generalizing the kappa-symmetry of single D0-brane action (massive $D=10$ superparticle or Dirichlet superparticle). The action includes an arbitrary nonvanishing function $M(H)$ of the relative motion Hamiltonian H . The 10D mD0 model with a particular form of $M(H)$ can be obtained by dimensional reduction from the action of the $D=11$ multiple M-wave (mM0) system. This talk is based on Phys. Rev. D106 (2022) 066004 with Igor Bandos.

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