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Large N simulation of the twisted reduced matrix model with an adjoint Majorana fermion

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To investigate the properties of the large N limit of $\mathcal{N} = 1$ SUSY Yang-Mills theory, we have started a feasibility study for a reduced matrix model with an adjoint Majorana fermion. The gauge action is based on the Wilson action and the adjoint-fermion is the Wilson-Dirac action on a reduced lattice with twisted gauge boundary condition. We employ the RHMC algorithm in which the absolute value of the Pfaffian is incorporated. The sign of the Pfaffian is involved with the re-weighting method and separately measured as an observable. In this talk, we show the configuration generation status towards the large N limit and the behavior of the lowest/lower eigenvalue(s) of the Wilson-Dirac fermion operator.

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