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Non-orientable surfaces and electric-magnetic duality

Saturday, July 7, 2018 9:30 AM (30 minutes)

Kapustin and Witten showed that a twisted version of N=4 gauge theory in four dimensions compactifies to a two-dimensional sigma-model whose target space is the Hitchin moduli space. In this talk, I consider the reduction of the gauge theory on a four dimensional orientable spacetime manifold which is not a global product of two surfaces but contains a non-orientable surface. The low energy theory is a sigma-model on a two dimensional worldsheet whose boundary components end on branes constructed from the Hinthin moduli space of a non-orientable surface. I will also compare the discrete topological fluxes in four and two dimensional theories and verify the mirror symmetry on branes as predicted by the S-dualty in gauge theory.

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