Geometry, Topology, and Physics Seminar

N=2 dualities and Riemann surfaces

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Room 6635 South Hall

Abstract: N=2 supersymmetric field theories in four dimensions have been studied from many points of view, notably by Seiberg and Witten in the mid-1990's who introduced an associated Riemann surface and used its properties to derive remarkable results about the physics, and remarkable consequences for mathematics. In the past six months, work of Gaiotto and collaborators has shown that these theories can be studied by means of *another* Riemman surface, this time used to compactify the six-dimensional N=(2,0) field theories to obtain a four-dimensional theory. Moreover, the two-dimesional field theory on this "other" Riemann surface is related in many interesting ways to the N=2 four-dimensional field theory.

This lecture will give an overview of these developments, which will be described in more detail in future lectures of this seminar.

Information about future meetings of this seminar can be found at
http://www.math.ucsb.edu/~malmendier/GTPseminar/