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Witten index for noncompact dynamics

Monday, 17 July 2017 16:00 (1 hour)

Many of the gauged dynamics motivated by string theory come with gapless asymptotic directions. In this talk, we focus on d=1 GLSM's of such kind and their Witten indices, having in mind of the associated D-brane bound state problems. Upon illustrating by examples that twisted partition functions can be misleading, we proceed to explore how physical Witten indices can sometimes be embedded therein. There arise further subtleties when gapless continuum sectors come from a gauge multiplet, as in pure Yang-Mills or non-primitive quiver theories. For such theories, the twisted partition functions tend to involve fractional expressions. We point out that these are tied to the notion of rational invariant in the wall-crossing formulae, offering a general mechanism of extracting the Witten index directly from the twisted partition function.

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