

Tuesday, May 2 @ 4:00 PM

Physics & Astronomy Building (PAB) 4-330

Vortices in 4d, $N=2$ SQCD and their Worldsheet Theory from Supersymmetric Localization

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I will describe work in progress, with Avner Karasik and Zohar Komargodski, in which we use supersymmetric localization techniques to study the low-energy dynamics of BPS vortex-strings in 4d, $N=2$ supersymmetric QCD. The theories that we study have a moduli space of BPS-vortices, and the low energy fluctuations around a stable vortex solution are captured by a two-dimensional $N=(2,2)$ theory on the worldsheet of the vortex. We propose a prescription for extracting the two-sphere partition function of the worldsheet theory from the four-sphere partition function of the four-dimensional parent theory. We use this prescription to extract information on the worldsheet theory in cases that were not discussed in the literature, and to discuss the existence of a two-dimensional effective description when the bulk theory is not gapped.