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Framing and localization in Chern-Simons theories with matter

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Supersymmetric localization provides exact results that should match QFT computations in some regularization scheme. The agreement is particularly subtle in three dimensions where complex answers from the localization procedure sometimes arise. I will introduce this problem in the case of 1/6 BPS Wilson loops in ABJ(M) theory. I will show how the localization results are reproduced perturbatively and argue that the imaginary parts originates entirely from a non-trivial framing of the circular contour. Contrary to pure Chern-Simons theory, for ABJ(M) the framing phase is a non-trivial function of the couplings and potentially receives contributions from vertex-like diagrams. The intimate link between the exact framing factor and the Bremsstrahlung function of the 1/2-BPS cusp is also discussed.

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