

## Compton scattering in TFD formalism

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We consider a Chern-Simons vortex in the presence of a magnetic impurity that preserves half of the system BPS properties. First, we compute the deformed vacuum solution due to the impurities. Moreover, the family of energetically equivalent BPS solutions are also computed numerically, which are also modified. If the vortex is far from the impurity, it is approximately described by the vortex of the original Chern-Simons theory and the modified vacuum in the presence of the impurity. Finally, we consider the scattering between the vortex and the impurity. Interestingly, it occurs at a right angle for a vanishing impact parameter.