

All orders analysis of three dimensional CP^{N-1} model in $1/N$ expansion

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3-dim CP^{N-1} model

- Non-renormalizable in perturbation theory (by power counting)
- Renormalizable ?
in some non-perturbative method, like $1/N$ expansion.

What is done in this paper ?

- We analyze $\mathcal{N} = 2$ SUSY CP^{N-1} model in $1/N$ expansion.
- The argument is valid in all orders of $1/N$.
(via Super Feynman rules)
- We show the renormalizability and the existence of a non-trivial UV fixed point is suggested.