

Conformal field theory 3 ways: integrable, probabilistic, and supersymmetric



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Convergence of Nekrasov's Instanton Partition Functions

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In this talk, we will study the convergence properties of instanton partition functions in four-dimensional $N=2$ gauge theory with group $U(N)$, also in the presence of matter in the adjoint or (anti)fundamental representation.

The main result is that if the considered theory is conformal its instanton function, seen as a power series in the complexified gauge coupling, has a finite radius of convergence, whereas, if the theory is asymptotically free, its instanton function is convergent over the whole complex plane.

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