

On the Renormalization in Maximally Supersymmetric Gauge Theories

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The purpose of this work is to consider leading and subleading UV divergencies for the four-point on-shell scattering amplitudes in $D=6$ (8,10) supersymmetric Yang-Mills theories in the planar limit. It will be showed how the divergencies appear and how to evaluate them in all orders of the perturbation theory with the help of generalized RG equations. The subtraction scheme dependence of these results also will be noted in the sense that in full analogy with renormalizable theories the scheme dependence can be absorbed into the redefinition of the couplings. At the end the renewed view on the renormalization procedure in MSYM theories will be presented.

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