

Cross-sections and various permutation series

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Abstract

We study in the first place the cross-sections of the N -dimensional $SU(N)$ super-Yang-Mills theory in the presence of a scalar field and a scalar vector. In particular, we show this for the first time in a general case in which the scalar vector is sufficiently large to be completely independent of the scalar field. We then derive the permutation series of the N -dimensional $SU(N)$ super-Yang-Mills theory under the influence of the scalar field and the scalar vector. We show that the complicated series do not have any reciprocation properties, so that they can be used to calculate the N -dimensional $SU(N)$ super-Yang-Mills theory in any discrete time. This explains the lack of a "perfect" Yang-Mills theory in the nonperturbative limit.