In this article, technical developments on the calculation of a two-loop planar maximally helicity violating (MHV) amplitude in $\mathcal{N} = 4$ super Yang-Mills theory are presented. Specifically, the developments are made on the *parity-even part of the two-loop seven-point planar MHV* amplitude. This article is mainly motivated by previous investigation on the six-point amplitude of the same type in [1], where nontrivial confirmation on a recently suggested correspondence [2] between Wilson loops and planar MHV amplitudes has been shown. In the article under review, it is found that the amplitude of interest can be expressed in terms of conformal integrals in some restricted fashion. Based on this result, it is also argued that a useful computational rule can be derived. The reader may also find it interesting to apply these techniques to the amplitudes of an arbitrary number of external particles, which is carried out in another paper by the same author [3].

References

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