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Direct numerical computation and its application to the higher-order radiative corrections

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The direct computation method(DCM) is developed to calculate the multi-loop amplitude for general masses and external momenta. The ultraviolet divergence is under control in dimensional regularization.

We discuss the following topics in this presentation.

From the last report in ACAT2016, we have extended the applicability of DCM to several scalar multi-loop integrals.

Also it will be shown that some 2-loop self-energy function can be calculated in the series of epsilon though DCM.

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