

Effective Fine Structure Constant

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DATE: Tuesday, June 18, 2019

TIME: 10:30 AM

PLACE: C2045

ABSTRACT: In the thesis, we use the dispersive approach to calculate the running of the fine structure constant. In this calculation, a truncated self-energy and triangle topology is considered up to Next-to-Next to Leading Order (NNLO). We have used the dispersive approach for two-loop self energy to evaluate a NNLO (two loop) contributions and a result obtained is rather compact expressions using only two loop Passarino-Veltman function basis. For the triangle topology, we have used a bulk approximation technique. The numerical result was obtained using the LoopTools and ColliersLink packages in Mathematica.

ALL ARE WELCOME!