

# Phenomenology 2023 Symposium



Contribution ID: 139

Type: not specified

## Master Integrals for Electroweak corrections to $gg \rightarrow \gamma\gamma$

Monday, 8 May 2023 17:30 (15 minutes)

We present a calculation of the master integrals (MI's) required for the calculation of the Electroweak corrections to  $gg \rightarrow \gamma\gamma$  production in which the process contains a light quark loop.

The integrals can be broken down into four categories based on the flow of the heavy vector bosons throughout the loop. Two of the families are planar, and two are non-planar. We determine a canonical basis for each family which allows an efficient solution of the resulting differential equations via iterated integrals. We compute the families in relevant physical kinematics and obtain an efficient numerical evaluation based on an implementation of Chen-iterated integrals.

**Primary author:** FIORE, Gabriele (SUNY at Buffalo)

**Co-authors:** CHAKRABORTY, Amlan (The Institute Of Mathematical Sciences); WILLIAMS, Ciaran (SUNY Buffalo)

**Presenter:** FIORE, Gabriele (SUNY at Buffalo)

**Session Classification:** SM II