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Algebraic Approach to Massive Loop Diagrams PAULO ROTTMANN, LAURA REINA, Florida State University — The impending high statistics measurements to be done at the LHC demand precise theoretical predictions involving higher order massive loop calculations, for example in studying the production of heavy quark pairs and heavy quark pairs with extra jets or gauge bosons or Higgs bosons. We investigate the possibility of using algebraic techniques to calculate the loop integrals appearing in 1-loop and 2-loop QCD calculations with massive particles. We test the method proposed on 1-loop integrals and study how to extend it to the case of 2-loop integrals.

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