

aMCfast: automation of fast NLO computations for PDF fits

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Summary

I will present the interface between MadGraph5 aMC@NLO, a self-contained program that calculates cross sections up to next-to-leading order accuracy in an automated manner, and APPLgrid, a code that parametrizes such cross sections in the form of look-up tables which can be used for the fast computations needed in the context of PDF fits.

The main characteristic of this interface, called aMCfast, is its being fully automated, solving the current problem of a process-by-process manual procedure, and rendering it trivial to include any new process in a PDF fit. I will demonstrate this by considering several cases which are easily measured at the LHC, have a good constraining power on PDFs, and some of which were previously unavailable in the form of a fast interface.

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