

New version of NeatIBP: a novel tool for Feynman integral computation

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The integration-by-parts (IBP) reduction is one of the bottleneck steps in the evaluation of multi-loop Feynman integrals. NeatIBP is a program based on the syzygy method for IBP reduction. It generates much smaller IBP systems compared to traditional Laporta's algorithm, which helps reduce the computation cost of IBP reduction. In this talk, I will present the new version of NeatIBP. It is with multiple useful new features. These features include: the automated interface with the popular Feynman integral reduction software Kira, the implementation of IBP reduction using the idea of spanning cuts, the algorithm of syzygy vector simplification, and more. I will also introduce some recent works in amplitude computation that is supported by NeatIBP.

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