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Loop QCD. (English) [Zbl 1242.81132](#)

Fortschr. Phys. 59, No. 11-12, 1059-1065 (2011).

Summary: In this lecture I briefly review the extraordinary developments, over the last few years, of QCD calculations beyond the leading approximation. The new reduction techniques have been paved the way for many calculations, that most people believed impossible before. In particular, the OPP method is discussed along with the description of the HELAC-NLO system. A couple of its applications are briefly presented.

MSC:

- 81V05 Strong interaction, including quantum chromodynamics
- 81T15 Perturbative methods of renormalization applied to problems in quantum field theory
- 65C05 Monte Carlo methods
- 81-04 Software, source code, etc. for problems pertaining to quantum theory
- 81-02 Research exposition (monographs, survey articles) pertaining to quantum theory

Keywords:

next-to-leading order calculations; NLO-QCD; Monte-Carlo generators; matrix element calculations

Software:

[HELAC](#)

Full Text: [DOI](#)

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