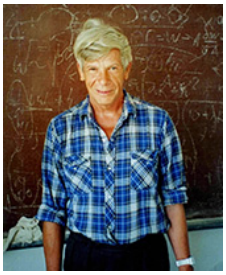

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Elliptic NRQCD master integrals and hypergeometry expansion

The analytical calculation of Feynman integrals is an important problem in modern quantum field theory. Of greatest interest are the so-called non-polylogarithmic Feynman integrals. For such integrals, there is no single universal technique that would allow to find an exact analytical solutions for all cases. This report will be devoted to this problem. In this work, we use an example of two loop elliptic master integrals arising from non-relativistic QCD as a laboratory to develop new methods for calculating non-polylogarithmic Feynman integrals. First of all, we will consider a new method that allows to obtain exact, in terms of the dimensional regularization parameter, solutions for the integrals under consideration. In this case, the solutions are expressed in terms of well-known generalized hypergeometric functions. In the second part of the report, we will focus on specific generalized hypergeometric functions present in the solution. Their expansion in terms of the dimensional regularization parameter present in the coefficients will be considered. In this case, it is possible to obtain both integral representations and representations in the form of triangular sums.

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