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Polylogarithms in quantum physics

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RESUMEN.

I introduce a concept of Feynman diagrams and explain why this tool is very useful for study of quantum phenomena. Then, I consider a special family of ladder diagrams and show why this family is important for quantum physics, and review briefly old results about the calculation of the ladder diagrams. In particular, I pay attention to the loop reduction technique for this family of diagrams. Different types of Polylogarithms appear at the end of this calculation by the loop reduction technique. I will show how all these results may be re-written basing on the concepts used in algebraic geometry