

Feynman Integrals and Calabi-Yau Mathematics

Thursday, 23 September 2021 09:55 (20 minutes)

In this talk I will show how concepts from Calabi-Yau geometry and especially Calabi-Yau motives can be used for computations of multi-loop Feynman integrals. This will be exemplified with the so called banana graphs. First, I will give a short introduction to Feynman integrals and Calabi-Yau manifolds. Then we will see how the mathematics of Calabi-Yau manifolds (variations of Hodge structures, Griffiths transversality, $\widehat{\Gamma}$ -class, ...) constrain or even determine the corresponding Feynman integral, here the banana graphs. At the end I will also shortly explain how the banana integrals can be solved in dimensional regularization in the equal- as well as in the generic-mass case.

Do you wish to attend the workshop on-site?

yes

Summary

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