

Upalaparna Banerjee

Federico Gasparotto

Pouria Mazloumi

Yong Xu

JOHANNES GUTENBERG
UNIVERSITÄT MAINZ



Theorie-Palaver

May 16, 2023 at 2 p.m.

Lorentz room (Staudingerweg 7, 5th floor)

Anne Spiering
Bohr Inst

Bootstrapping the elliptic double box

The direct integration of Feynman integrals can be a daunting task, in particular for increasing numbers of loops and external particles. The “symbol bootstrap” has proven to be a powerful tool in the calculation of certain polylogarithmic Feynman integrals and scattering amplitudes that bypasses this direct integration. In this approach one first writes an ansatz for the symbol of the integral and then fixes its degrees of freedom by imposing known mathematical and physical properties of the final result. In this talk I will discuss a generalisation of this approach to an elliptic case: the 12-point two-loop double-box integral. The bootstrapping ansatz is obtained from an elliptic generalisation of the so-called Schubert problem, and after imposing a sufficient number of constraints on this ansatz, we obtain a compact one-line formula for the $(2,2)$ -coproduct of the double-box integral.

Contact:
ubanerjee@uni-mainz.de

fgasparo@uni-mainz.de

pmazloumi@uni-mainz.de

yonxu@uni-mainz.de