



# INVITATION

as part of the Particle Physics Seminar

to the talk by

**Sven MOCH**

(University of Hamburg)

on

***“QCD evolution equations at four loops”***

**Abstract:**

We review the status and precision of evolution equations for parton distribution functions (PDFs) in QCD.

We present ongoing efforts on extending the evolution kernels and splitting functions to four loop accuracy in the perturbative expansion. The work is based on the computation of fixed Mellin-N moments for the anomalous dimensions of off-shell flavour-singlet operator matrix elements for a general gauge group. Using these results and all available endpoint constraints, we construct approximations for the splitting functions at four loops that should be sufficient for most collider-physics applications.

For partial results such as the fermionic contributions to non-singlet splitting functions, also analytic all-N results are determined by solving systems of Diophantine equations.

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**Time: Tuesday, 27 May 2025, 4:15 p.m.**

**Location: Erwin-Schrödinger Lecture Hall, 1090 Vienna, Boltzmannngasse 5, 5<sup>th</sup> floor**

Join Zoom Meeting - Meeting ID: 933 4269 3866 Passcode: 185096

<https://univiennea.zoom.us/j/93342693866?pwd=aUpTR0VJNUhJY2Q0ajdaKzI1YWVBQT09>