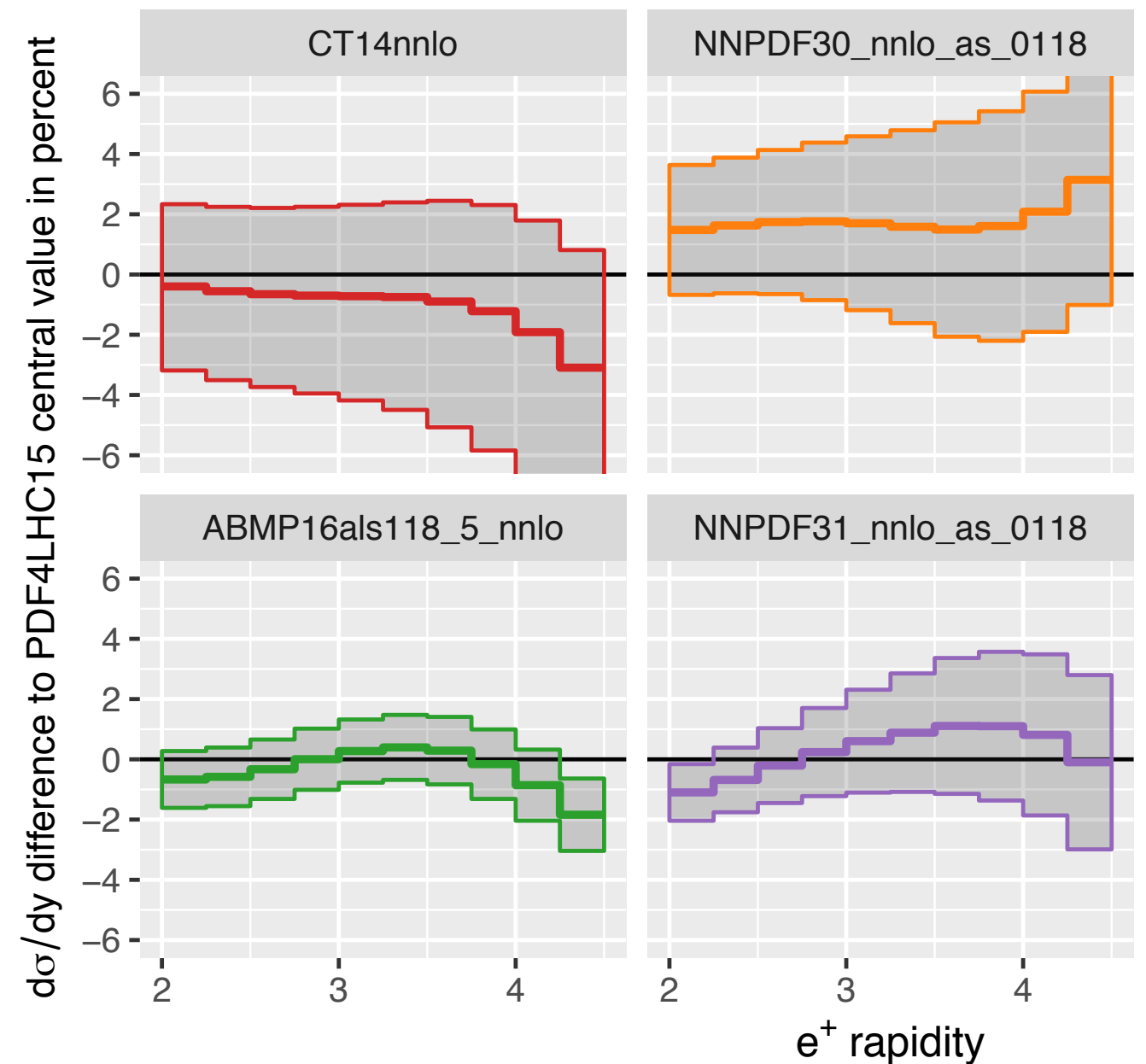
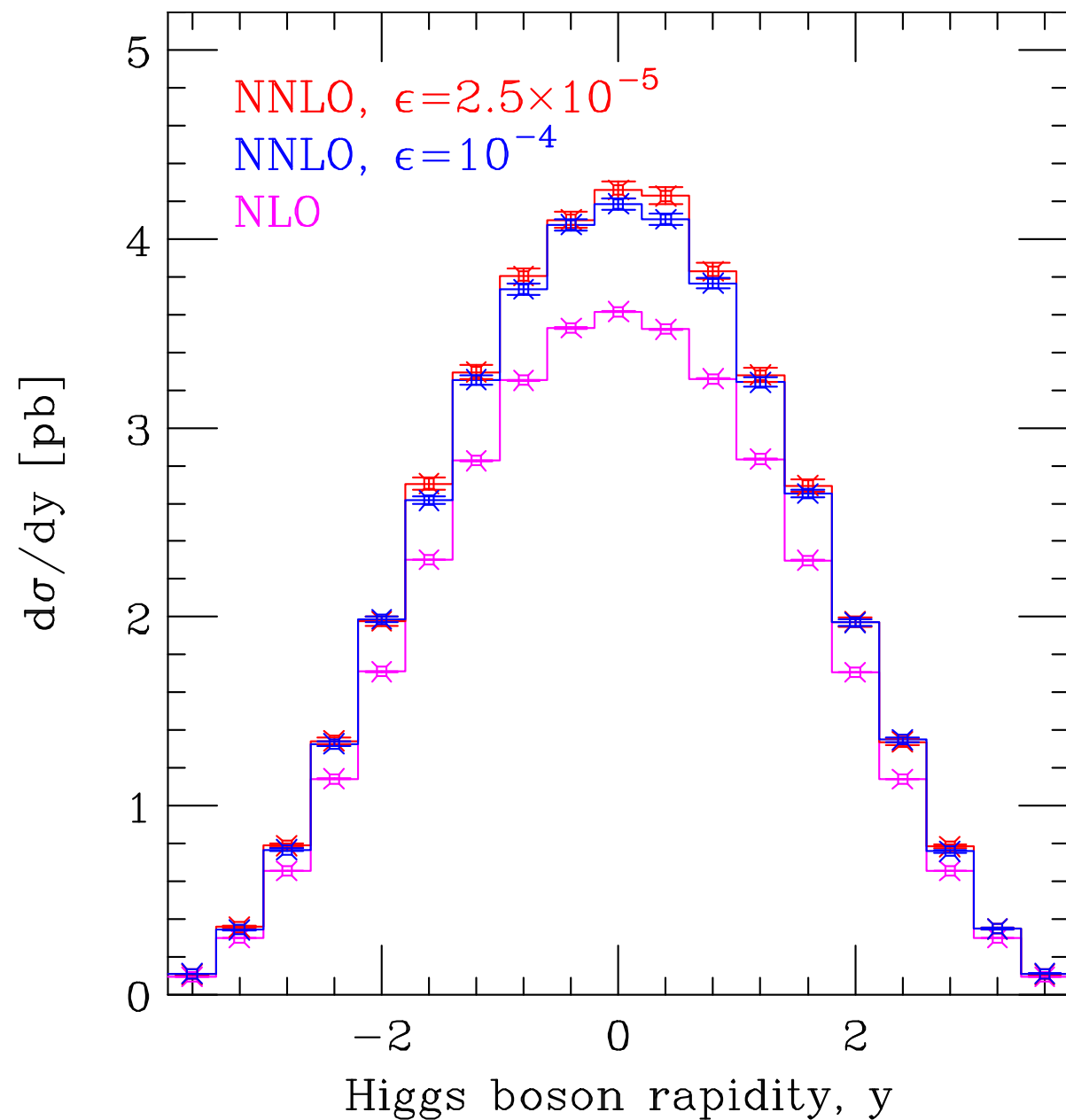
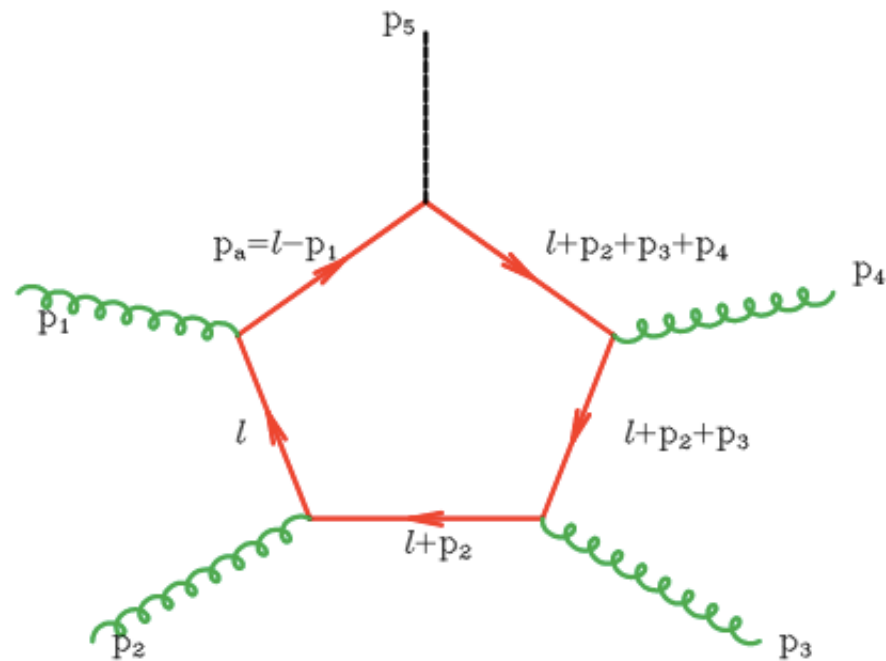


- Precision fixed-order calculations for the LHC
 - delivering a tool for predictions at NNLO (MCFM)
- Focus on Higgs processes, SM measurements and backgrounds
 - Higgs p_T spectrum (BSM probe) and detailed studies of SM candles



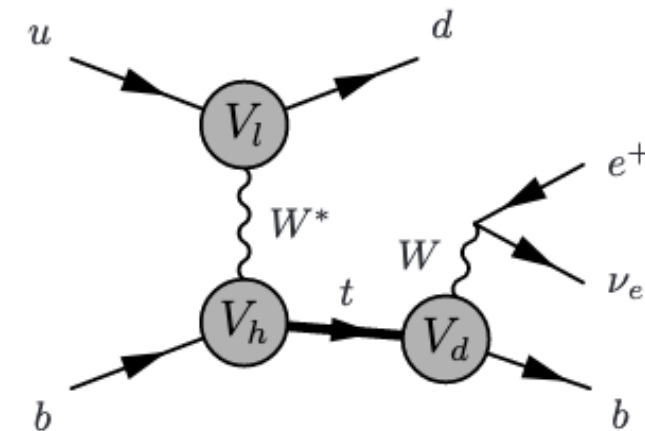
- Analytic calculation of one-loop amplitudes
 - theoretical insight; fast, efficient calculation for highest-profile processes.



unitarity techniques;
ideas from formal amplitudes,
e.g. momentum twistors

$$Z = \begin{pmatrix} \lambda_1 & \lambda_2 & \lambda_3 & \lambda_4 & \lambda_5 \\ \mu_1 & \mu_2 & \mu_3 & \mu_4 & \mu_5 \end{pmatrix} = \begin{pmatrix} 1 & 0 & \frac{1}{x_1} & \frac{1}{x_1} + \frac{1}{x_2} & \frac{1}{x_1} + \frac{1}{x_2} + \frac{1}{x_3} \\ 0 & 1 & 1 & 1 & 1 \\ 0 & 0 & 0 & x_4 & 1 \\ 0 & 0 & 1 & 1 & \frac{x_5}{x_4} \end{pmatrix}$$

- Single top production (t-channel) at NNLO
 - resolve inconsistent calculations, lift limitations and approximations



- H(\rightarrow bb)+jet at NNLO in both production and decay.
- Public code for all NNLO “+jet” calculations (currently none available).