

Open issues and next steps

- EW

- NLO EW corrections themselves known since long; current efforts focus on the evaluation of $O(\alpha_s\alpha)$ corrections. Recent results show that the situation is under control now : fixed-order benchmarks well established, and reproduced by programs also including further corrections (QCD and QED parton showers).

Pair emissions play an important role

- The ball is now clearly in the camp of the experimental collaborations : including these corrections in the simulation should allow to bring associated the uncertainties down to a few MeV, in collaboration with the theorists

Note : also important for $\sin^2\theta_w$

Open issues and next steps

- QCD

- Strong dependence of modeling uncertainties quoted by the experiments on theoretical assumptions, in particular re. $Z \rightarrow W$ extrapolation

Very interesting discussions on predictions for the W/Z p_T distribution ratio : can we turn this into a concrete work program?

- PDFs : strange PDF still somewhat controversial. Recent LHC data are quite precise and point to limitations in theory predictions used in the fits (fixed-order, NNLO). Choice of input data has significant impact.

Need to revisit/improve our methodologies?

- Tools

- persisting dream of an all-inclusive theoretical framework

Open issues and next steps

- Experiment
 - Publish all information relevant for understanding, comparing and combining results (importance of theory corrections and uncertainties!)
- We propose to hold the next meeting in June, at CERN; precise date to be defined