Workshop on high-precision alpha_s measurements: from LHC to FCC-ee

Monday 12 October 2015 - Tuesday 13 October 2015

CERN

Scientific Programme

1. State-of-the-art of alpha_s determination:

Low scales: lattice QCD, pion decay factor, tau hadronic decay, QQbar hadronic decays, parton-to-hadron FFs

High scales: DIS PDFs, DIS jets, e+e- event shapes, e+e- jets, hadronic Z,W decays, sigma(e+e--->hadrons), electroweak fit, ...

Results at hadron colliders: top quark, jets, LHC results

2. Current theoretical uncertainties of each extraction method: missing higher orders, electroweak corrections, power corrections, hadronization corrections,...

3. Expected alpha_s uncertainty in ~10 years from now (theoretical developments + ~1 ab-1 p-p at 14 TeV at the LHC)

4. Expected improvements brought about by the FCC-ee.