

Possible α_s Studies for FCCee

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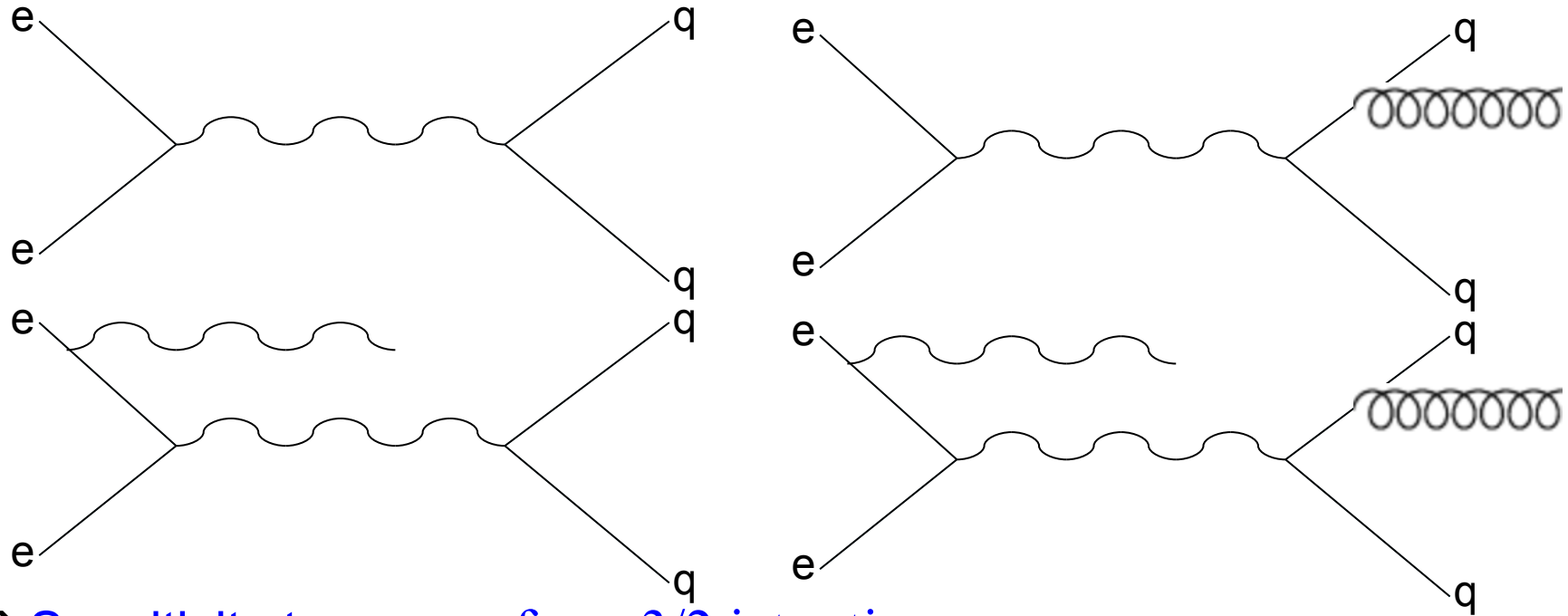
→ Based also on discussions with David d'Enterria

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α_s evaluation from hadronic Z decays

- Used as “reference value”: determinations at other energies evolved at the m_Z scale and then compared to test the RGE from QCD
- Theoretical prediction available at N³LO
- Better convergence of the perturbative series and less non-perturbative corrections compared to precise determinations at lower scales (e.g. from τ decays)
- Need to study acceptance and reconstruction efficiency etc. in view of optimizing the detector design

α_s evaluation from (ISR) jet production



→ Sensitivity to α_s e.g. from 3/2 jet ratios

- High luminosity allows to select large samples of events with collinear / large angle ISR photons: allows to scan \sqrt{s} with the same detector and collider conditions – important for RGE test
- Need to study jet and photon energy calibration and resolution, acceptance and reconstruction efficiency etc. in view of optimizing the detector design