ILD & ECFA Focus Topics TwoF and BCFrag/Gsplit

Adrián Irles

AITANA group at IFIC – CSIC/UV

TwoF
Coordinated by WG1-HTE and WG1-PREC

13 TwoF — EW precision: 2-fermion final states ($\sqrt{s} = M_Z$ and beyond)

Expert Team: Emanuele Bagnaschi, Adrián Irles, Daniel Jeans, Alessandro Vicini

▷ Mini-workshops

- Two Fermion Physics https://indico.cern.ch/event/1387393/ (March 2024)

- ECFA HTE meeting on Z-pole physics https://indico.cern.ch/event/1196494/ (Sept. 2022)

▷ **Latest ILD contributions** (un-complete list?):

- Snowmass studies on Z-pole (Poeschl et al) https://inspirehep.net/literature/2052751

- BSM prospects using AFB (b/c) Eur.Phys.J.C 84 (2024) 5, 537
  https://inspirehep.net/literature/2768760 **NEW ILD PUBLICATION**

▷ **Input to EPPSU ?** Discussions not yet started!! Few thoughts…

- ILD - Tau-tau reconstruction – Daniel Jeans et al…

- Potentially – qqbar NLO calculations in whizard? Still, discussions are pending. (~ILD)

- Interplay with BCFrag/Gsplit (no ILD person power found so far…)

- **next meeting organized for the 13th June** – Join us! https://indico.cern.ch/event/1422237/

BCFrag/GSplit
Coordinated by WG1-PREC

14 BCfrag and Gsplit — Heavy quark fragmentation and hadronisation, gluon splitting and quark-gluon separation

Expert Team: Paolo Azzurri, Eli Ben Haim, Loukas Gouskos, Ayres Freitas, Adrián Irles, Andreas B. Meyer, Simon Plätzer, Andrzej Siodmok, Torbjörn Sjöstrand, Maria Ubiali

▷ Notes for meeting 15 May 2024 https://indico.cern.ch/event/1412563 (only the experimental part!, for more, check the minutes in the event!)

- **Synergies with W-mass** (FT document 4.1) color reconnection (Raimund Stroemer,).

    Clarify whether we can use LEP data with newer algorithms to see possible effects in the data. Try also with simulations of new data

▷ Person power in quark tagging and q/g separation

- FCC – Loukas Gouskos (also trying to revive LEP data in EDM4HEP – not ready for October)

- CEPC – Manqi Ruan et al

- ILD - (T. Suehara et al, more focused on the "algorithm" performance. We should make the connection with the BCFrag Topic)

▷ Synergies with ILD members:

- Studies of control of ColorReconnection uncertainties in WW (4jets) with modern jet algorithms that allow to control the contribution of low momentum tracks "outside the jet cone" (VLC, generalized e+e-kT)

- Discussions started among theoreticians and ILD jet-experts (M. Vos)