

Michele Selvaggi – Lecture Questions

Questions marked in green were answered during the Q&A session. Original questions listed without correction for grammar/spelling. Where a slide number was given it is shown. For questions answered during live Q&A, please check the ZOOM recording for live answers.

- Q1 (slide 8) Why does "Low E FCC-hh" assume 6-T magnets? What motivates going to lower field than in LHC magnets?
- Q2 (slide 12) How valid is the assumption "we need the same number of events at 14 TeV and 100 TeV to claim discovery" in terms of mass reach? For example, unless it is background free, the number of signal events needed depends on background fluctuations. And what is the influence of detector resolution?
- Q3 (slide 16) Nice talk, thanks! Can you explain what eta is?
A: eta = Pseudorapidity ([see wikipedia](#))
- Q4 (slide 17) Why does the EFT assume the top mass to be infinite?
- Q5 (slide 16) Upper right plot. I think the "x" in the horizontal axis is the variable in Parton distribution functions, is that right? FCC depends on down to 10^{-8} . How good is the understanding of distribution functions here?
- Q6: Which measurements from HL-LHC cannot be done at an e+e- collider, but would most greatly benefit from being reinterpreted with precision measurements from an e+e- collider? E.g. what HL-LHC measurements would most greatly benefit from a better Higgs width measurement?
- Q7 (slide 30) Would future hadron colliders have any sensitivity to the quartic self-coupling?
- Q8 (slide 38) Is FCC-hh still better at the listed measurements if compared to a linear lepton collider?
- Q9 (slide 31) It says here that b-b-gamma-gamma is the most sensitive (for FCC-hh). I thought earlier Lectures indicated there were several channels that are comparable. Did I remember wrong or something changes going from 14 to 100 TeV?