

WP2: Precision physics and searches

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ESPP potential approach

- LHeC: maintain our efforts to make synergies publicly known to enthuse community; critical remains Alice3 efforts and joint interaction region; CERN may commit more with new DG since we may have to think much longer for the use of LHC in the overall international landscape.
- Focus on FCC-eh : Ensure $E_e=60$ GeV, $E_p=50$ TeV still appropriate conditions
 - Add impact of lower electron beam energy while keeping 50 TeV for protons
 - Should a lower E_p (but > 7 TeV) be considered ? But this shouldn't pose a problem anyway.
- Analysis proposals: No need to re-do things that have already been largely explored BUT must systematically re-evaluate reaches and complementarities in light of new results and proposals
 - E.g., LHC results for Higgs, precision physics, new searches
 - Future non-collider experiments now approved (e.g. SHIP) for hidden sectors
 - New prospect results from FCC-ee and FCC-hh
- Challenges and proposals: very short in person-power
 - CERN PED group only focused on FCC-ee; the latter also poses a problem to FCC-hh
 - Be more creative how to engage final year project students and postdocs that can devote time to this. Develop simplified but robust analysis strategies and make those publicly available.
 - Extend on our software documentation/tutorials etc., to make it easy for analysers (as above) to engage with ep studies
 - Keep closer connection to MC community and to engage theory community to come up with a concrete list of interesting benchmarks optimized for ep to be (re) done as analysis studies → tasking phenomenologists to consider the option is perhaps the only way forward at least for BSM studies.