NOTES FROM 5th Physics workshop SPC (6 sept 2021)
GS + AB

1.2 SPC meeting <2021-09-06 Mon>, https://indico.cern.ch/event/1073302/

- LOC discussion
  - Mihoko asks about February timing, and comments that last year after Xmas covid surges; expects that something very similar will happen anyway, with peak around middle of January and there may be some effect in February.
  - Monica: if each room can be used only at 50% capacity, then you need 800-people room for 400; largest room at university is 500. **CROSS CHECK WITH CARSTEN** about 50% capacity limits for rooms.
  - Alain: plenary, asks question about using two rooms for plenary; Monica comments that in-term things are complicated, but need Carsten for an answer
  - Mihoko: are we sure we will have workshop with dinner (in Japan we don't do this recently)? Also what is date of no return?
  - Alain concludes: we must make it easy for remote participation + continue this discusion in a smaller group.
  - Letter sent to LOC with better specifications of cost, attendance and suggestion to fix max. number of registrations to 150 → see LOC status.

- IPAC discussion (Alain):
  - input needed on Russian IPAC member
  - Mihoko suggests Shoji Asai or Hanada-Ki (but too young), will contact Alain with more info
  - Monica asks about South America (and Alain raises Korea, India, Pakistan)
    A number of suggestions have been collected. Will send message to IPAC for information as soon as Poster and indico page are in order. Same message will be asking for input on important questions and answers and topics that would be of interest to them and asking them
    1. To suggest people to invite or
  - 2. To spread the information around them (particularly true for ECFA chair and lab directors)
- Emmanuel & Patrizia:
  - target 3h of // sessions + plenary and/or summary
  - mention of joint software/performance session with tutorial (allow half a day)
    We need to discuss today how to fit this "tutorial" session in synergy with similar request from Detector concept group. (take one parallel session or maybe do this on Tuesday evening?)
- Matthew:
  - Liantao: many of these things are covered in the physics briefing book, are they not? Matthew, says these things have been done only for minimal composite

Higgs models, but MmcC thinks we need a more comprehensive view; for HHH coupling, is there a scenario where HHH is the first place where we see a deviation
    - Christophe: also of interest, what are implications of LHCb (or g-2) anomalies for FCC.
    - Gino: more generally, related to the precision issue, the universality tests are very interesting; it would be nice to see the potential of FCC-ee for universality tests of tau decays (easy to motivate from theory view, but what is missing is the level of precision that one could reach, e.g. what is needed both exp and theoretically); can build a nice story with b-anomalies. [Matthew will follow on with Gino & CHristophe]
    - Matthew Reece: Ayres Freitas has recent work on 2-loop contributions to Higgs-strahlung; on flavour topic Ling-Gang-Li and Tau Lio (Bs->ll)
        - new appraoch to hierarchy that Csaba et al have look at (model can be best constrained at FCC) -> Matthew comments that we could have a broader naturalness talk
        - Nachmann: anomaly detection -> Matthew suggests generic ML and FCC talk
    - Patrick: need to build bridges, could perhaps have a // session on benchmark processes
    - Monica: many Snowmass studies ongoing that applky to FCC, so make sure that we don't forget any of those things that are ongoing.
      This brings the question of a snowmass report, (could fit on Monday afternoon or sometime on Thursday) for which we need to be very specific about what we want to hear.
- Gerardo Ganis: **software**
    - questions about full / fast sim, interplay between them, etc. (see slides)
    - Alain -> work under assumption that tutorials take place
- Mogens: detector concept group does not really exist yet; has had a 1-hour conversation with a potential co-convener of the group; discussion will continue; have not yet moved to practicalities; 3rd workshop, we had two full days of sub-detectors // session going through all possible detector (bits?); last year, had different detector sessions running in //, which is not optimal, because many people interested in detectors would like to learn about other kinds of detectors. As concerns, thinks it will certainly be more than 1 // session, might be **two or three**. He is nervous, between covid and registration fee that we might not have so many people
- Manuela:
    - one MDI // session (with suggestions of topics)
    - two possible plenary talks (optics update incl 4 v 2 IP); MDI summary
    - Alain asks: where would you be talking about the size of the beam pipe
- Alain EPOL:
    - looks like 2-3.5 hours of // session
    - plus some things common with physics performance and/or MDI
    - plenary report: one or two on ECM and monochrom in summary session.
- Alain on keynote speakers:
    - no objection to inviting Fabiola

- no objection to inviting council chair (this will be a new person)
- FCC study leader needs to say something
- report on high-field magnet R&D
- maybe: report on Snowmass, CEPC / ILC
- etc. (see slides)
- Question from Matthew: balance of suggested plenaries looks more like an FCC week as opposed to PED
- Gino asks if we need Snowmass, Liantao asks whether it's the right time for Snowmass
- Patrick asks if we can ask them to taylor their talks to what we need to understand (e.g. Council chair on deliverables expected and what is needed from us) – need to be directive about what we want
- Monica: agree with Patrick, and in the same perspective, what would you expect from muon collider report (prefers extra physics talk to muon collider talk)
- Patrick: wants to second Matthew about importance of more physics talk; in past always found it a bit too much on organisation rather than physics; putting more emphasis on the physics, might help attract people, focusing on ideas, how discoveries might add up.
- MLM: also supports physics perspective (not the list of the plenaries he would like to see); e.g. for muon collider, much better to incorporate in a session where we discuss the physics, e.g. Higgs physics, or high-mass resonance session, then invite someone to do muon v hh; high-field magnet can go into Benedikt's talk
- Christophe: agrees that we should separate FCC week from physics
- Liantao: perhaps dedicated comparison between FCC-hh and muon collider is better discussed in dedicated physics sessions. (This may come up anyway in a physics keynote)
- [for summary of what we remove, see crosses on Alain's slide]

Now time to put all this and new suggestions in the programme!

- Joao on CEPC
  - a list of topics
  - Alain asks how Joao sees participation with CEPC results.
    - In terms of people it will be difficult for Chinese people to leave China (don't want to travel, strict restrictions to return to China). Given Olympic games, China may loosen this, but currently 3 weeks of isolation on return.
    - but maybe see if a few talks can be arranged

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- next meeting early October (with doodle) and continue with some discussion email.