

Prospects of FCC Activities at CPPM

S. Muanza: CPPM Marseille, CNRS-IN2P3 & AMU

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Specificity of CPPM wrt Future Colliders Prospects

- ILC: Contrarily to the other IN2P3 labs with HEP group(s), CPPM has not been involved in physics studies or R&D^a
- CEPC:
 - As the host of the FCPPL, CPPM has close contacts with CEPC colleagues
 - Illustration: next [CEPC International Workshop](#) to be held in Marseille on 4-7 May 2020
 - But no precise involvements on that front either

^aExcept for the design and management contributions by C. Vallée (see next slide)

Transition Period

- CPPM Scientific Prospects:
 - The absence of CPPM within future colliders activities was highlighted
 - An effort of follow-up of the different projects (ILC/CLIC/CEPC/FCC,...) spanned over the past 2 years
- Current situation: we recently formed a group called "FC-CPPM"
 - Scientific convenor: S.M.
 - Technical convenor: Patrick Pangaud
 - Aim: coordinate efforts within FCCPhys at CPPM, while following-up on developments of ILC and CEPC

Building on Past Experience

- Physics studies:

- S.M.: heavy charged higgs $H^\pm \rightarrow W^\pm(\rightarrow \ell^\pm \nu) + h^0(\rightarrow b\bar{b})$
- E. Petit, T. Strebler: *follow-up* on higgs precision measurements at FCC-ee and on di-higgs prospects at FCC-hh
 - Expertise: tracking, b-tagging, vertex detector simulation, MC generators,...
- Hope to attract more interest in FCC-ee flavour physics by our LHCb and Belle 2 groups

- Detectors R&D:

- M. Barbero, P. Pangaud: depleted monolithic active pixel CMOS sensors (*finer granularities*)
- P. Pangaud, M. Menouni: pixels FE electronics (*faster readout*)
- D. Hoffmann: rapidly increasing DAQ bandwidth (beyond PCIe 5.0: 64 GB/s) to cope with evolutions of sensors and readout electronics (*mentioned above*)
- E. Monnier: LAr calorimetry for FCC-ee and for FCC-hh
- S. Beurthey, E. Vigeolas:
 - pixels: microchannel cooling, support structures
 - LAr calo: cryostat walls and feedthroughs

- Status:

many names and an on-going R&Ds on pixels, but no actual FCC-oriented activities as yet!

- Claude Vallée has been involved in ILC over the past 3 years

- Technical coordinator of ILD since 2016 (ILD Interim Design Report to be released soon)
- Member of the KEK International WG on the ILC project