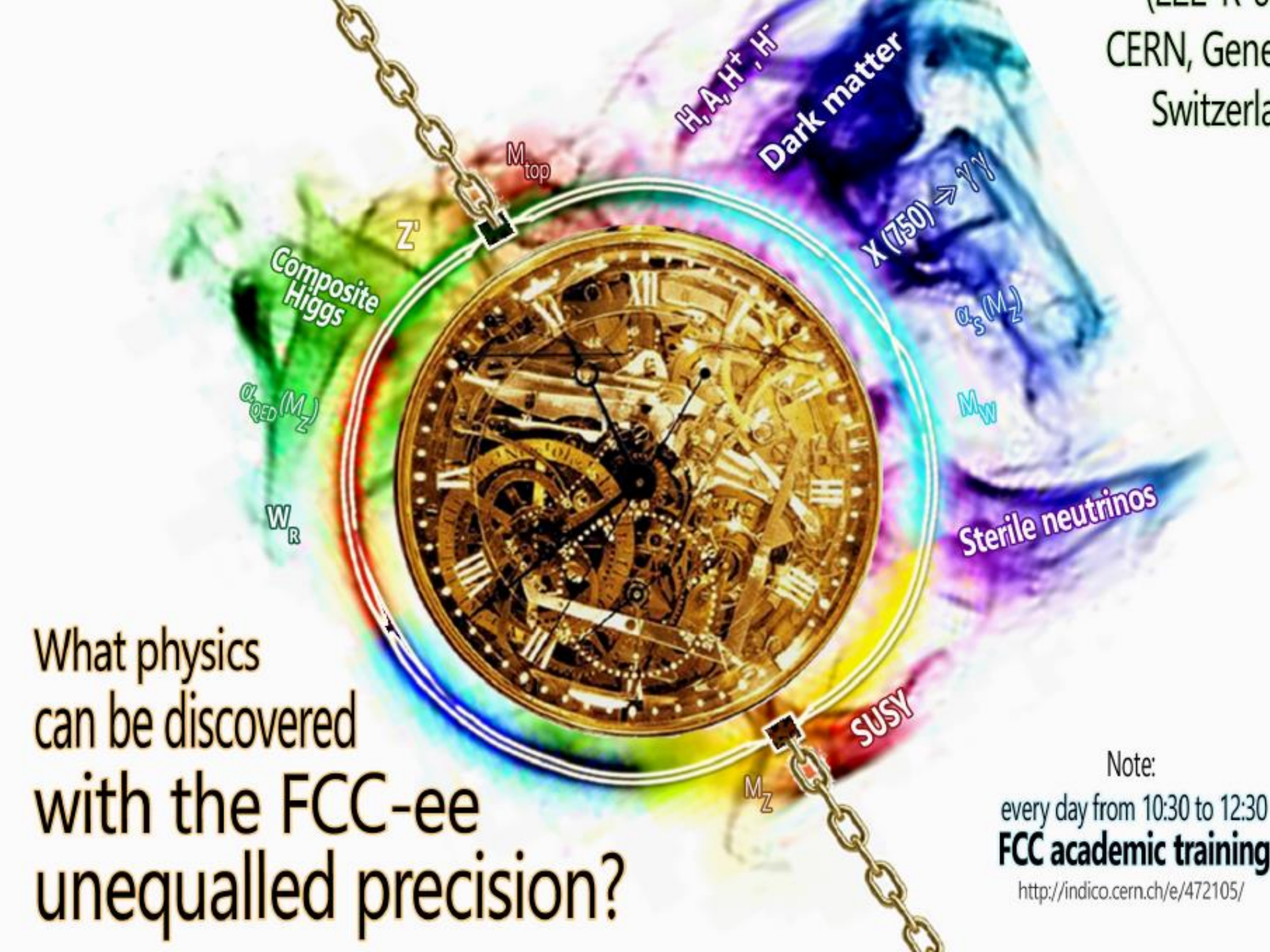


What physics
can be discovered
with the FCC-ee
unequalled precision?

Note:
every day from 10:30 to 12:30
**FCC academic training**
http://indico.cern.ch/e/472105/

CERN, Gene
Switzerla


# 10th FCC-ee physics workshop – wrap-up

http:cern.ch/fcc-ee

## 10th FCC-ee physics workshop in short:

0. preceeded by mini-workshop on 'behind precision'
   What physics can be discovered with the FCC-ee unequalled precision?

1. 60 registered participants (and a few non-registered ones)

2. A quantity of important new work since TLEP9 in Pisa
   -- top couplings
   -- $\alpha_{QED}$(Mz^2) direct measurements
   -- 'Sterile' neutrinos can help produce Higgs
   -- first analyses by students (→ effect of detector resolution and energy spread)
   -- MDI group starting
   -- Optics with full momentum acceptance and limited SR to detector exists!
      -- and a «baseline» that clearly wants to move towards the goal…

3. Integrating CLIC detector on FCC-ee
   -- a start, must keep working together

**Number of the day: 185**

**= number of quotes of the 'First Look at the Physics case of TLEP'**

**A great collection of papers with ideas of meaasurements to do at FCC-ee.**

**Just to give an example…**

image Taxi-phone ReadyTalk Phone Bridge Diary

HEP 185 records found 1 - 25 jump to record: 1 Search took 0.11 seconds.

1. **On the maximal diphoton width**
   Alberto Salvio, Florian Staub, Alessandro Strumia, Alfredo Urbano. Feb 3, 2016. 16 pp.
   e-Print: arXiv:1602.01460 [hep-ph] | PDF
   References | BibTeX | LaTeX(US) | LaTeX(EU) | Harvmac | EndNote
   ADS Abstract Service
   Detailed record - Cited by 1 record

2. **Lightness of Higgs Boson and Spontaneous CP-violation in the Lee Model: An Alternative Scenario**
   Ying-nan Mao, Shou-hua Zhu. Jan 31, 2016. 50 pp.
   e-Print: arXiv:1602.00209 [hep-ph] | PDF
   References | BibTeX | LaTeX(US) | LaTeX(EU) | Harvmac | EndNote
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   Detailed record

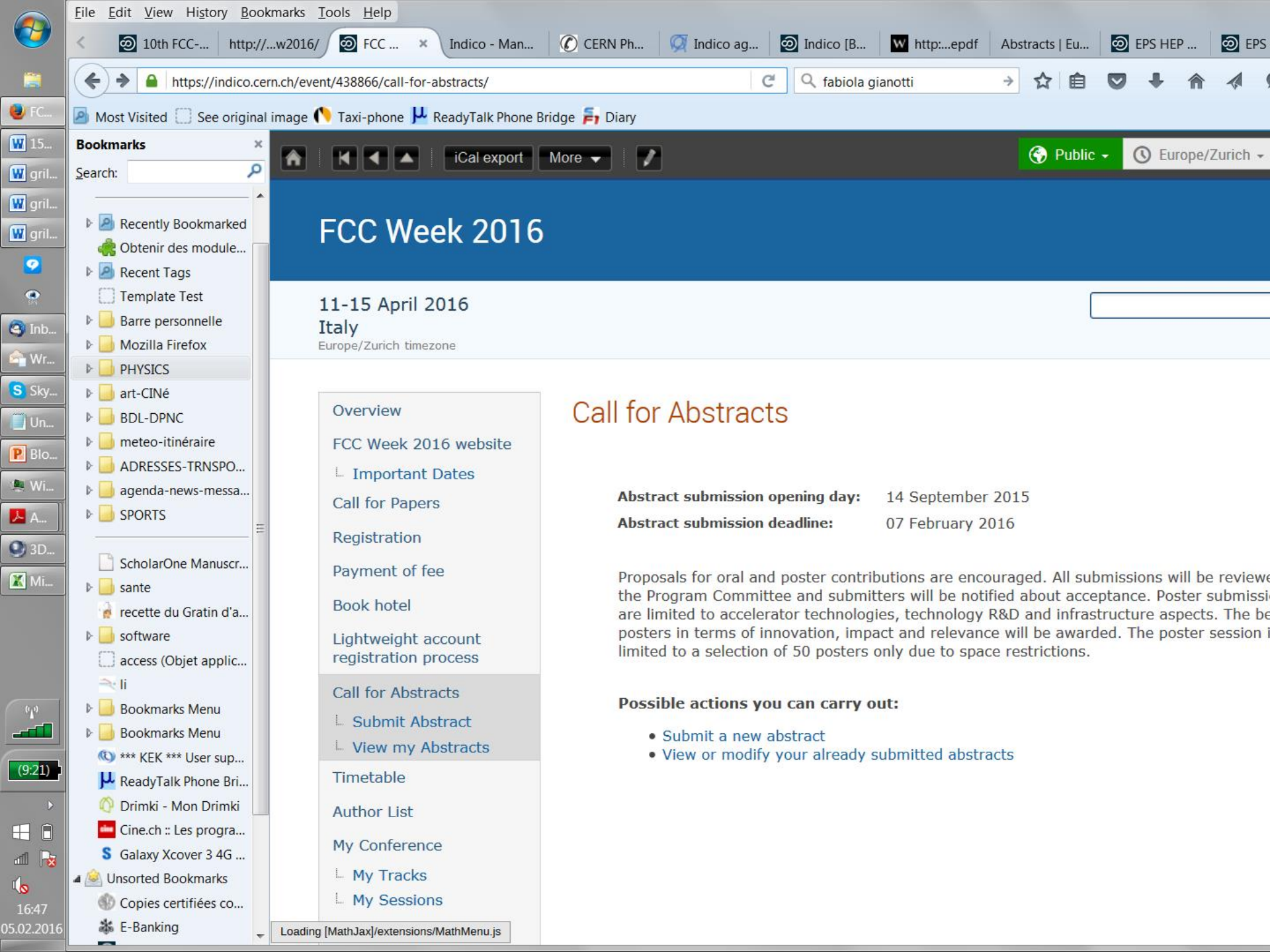
3. **SUSY effects in $R_b$: revisited under current experimental constraints**
   Wei Su, Jin Min Yang. Jan 28, 2016. 8 pp.
   e-Print: arXiv:1601.07758 [hep-ph] | PDF
   References | BibTeX | LaTeX(US) | LaTeX(EU) | Harvmac | EndNote
   ADS Abstract Service
   Detailed record

4. **Physics case of FCC-ee**
   David d'Enterria. Jan 25, 2016. 8 pp.
   Conference: C15-09-07.7
   e-Print: arXiv:1601.06640 [hep-ex] | PDF
   References | BibTeX | LaTeX(US) | LaTeX(EU) | Harvmac | EndNote
   ADS Abstract Service
   Detailed record

5. **Future flavour physics experiments**
   Neville Harnew (Oxford U.). 2016. 6 pp.
   Published in **Annalen Phys. 528 (2016) 102-107**
   DOI: 10.1002/andp.201500230
   References | BibTeX | LaTeX(US) | LaTeX(EU) | Harvmac | EndNote
   Link to Fulltext
   Detailed record

6. **Study of Higgsstrahlung Cross Section and Higgs Mass Measurement Precisions with ZH ($Z \to \mu^+\mu^-$) events at CEPC**
   Zhenxing Chen, Ying Yang, Manqi Ruan, Dayong Wang, Gang Li, Shan Jin, Yong Ban. Jan 20, 2016.

A study of the FCC programme at CERN, the Future Circular Collider, is ongoing [41]. Possible modes of operation of the FCC are the collisions of $e^+e^-$ (which includes a Higgs factory, *TeraZ* running on the $Z^0$ pole, *OkuW* at the *WW* threshold, the *MegaTop* top factory), *pp*, *ep* or heavy ions. The $e^+e^-$ option is in principle especially interesting for flavour physics. TeraZ gives $\mathcal{O}(10^{12})$ $Z$ events in 1 year, hence huge samples can be recorded in $Z \to b\bar{b}$, $c\bar{c}$ and $\tau^+\tau^-$. By way of example, TeraZ can deliver more than 20k $B_s \to \tau^+\tau^-$ events giving a $< 10\%$ precision on the SM BR; NP models can change the $B_s \to \tau^+\tau^-$ BR by large factors. Conversely, flavour physics options at the ILC/CLIC and a $\mu$-collider seem to be rather marginal to their respective programmes since they concentrate on high-energy running where the cross-sections for $b$ and $c$ production are small.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Abstract submission opening day: 14 September 2015
Abstract submission deadline: 07 February 2016
Proposals for oral and poster contributions are encouraged. All submissions will be reviewe
the Program Committee and submitters will be notified about acceptance. Poster submissi
are limited to accelerator technologies, technology R&D and infrastructure aspects. The be
posters in terms of innovation, impact and relevance will be awarded. The poster session i
limited to a selection of 50 posters only due to space restrictions.
Possible actions you can carry out:
Submit a new abstract
View or modify your already submitted abstracts
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# Next steps

**Rome FCC General Meeting 11-15 April**

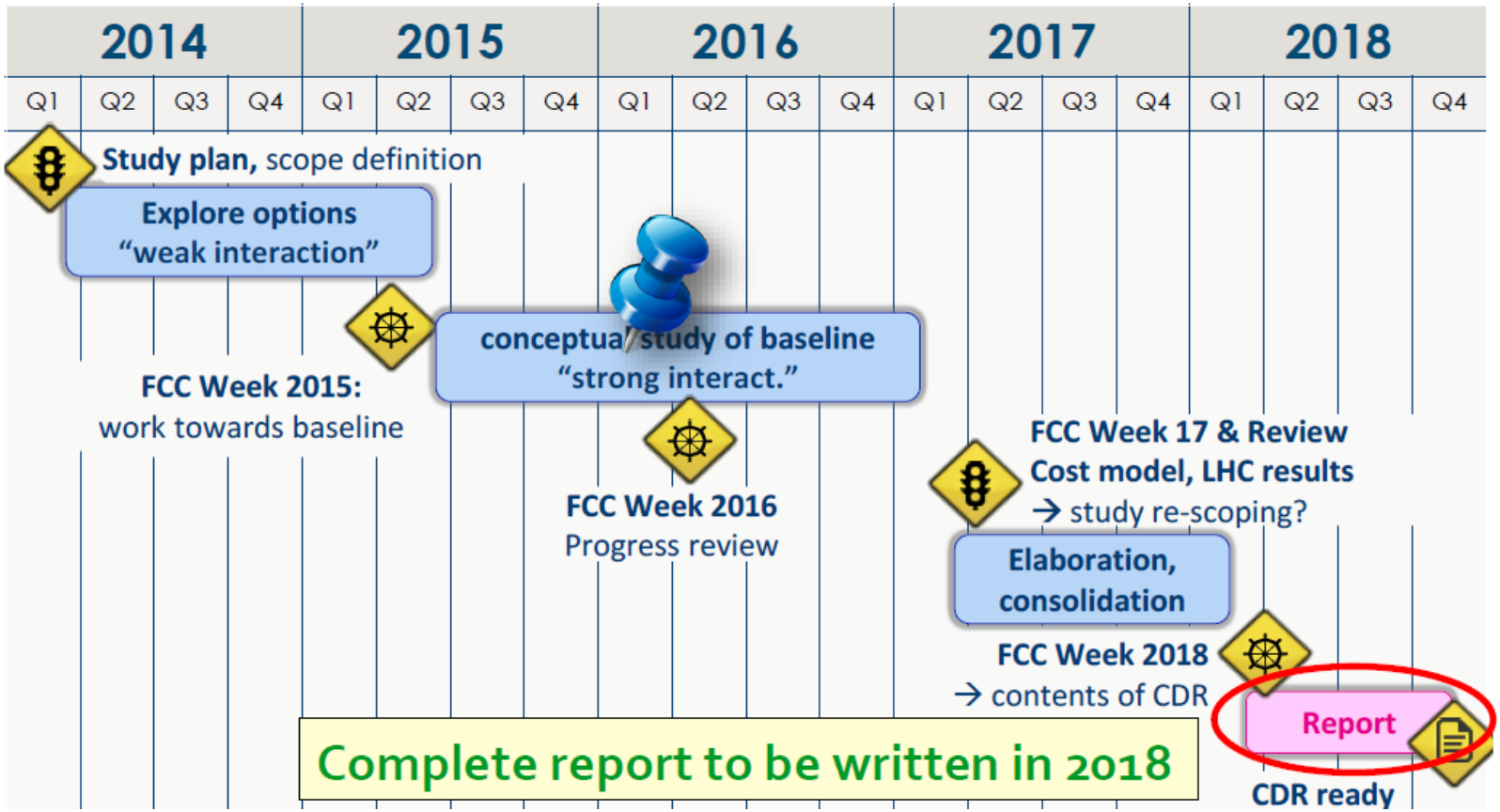
**→ register without delay!**
**deadline is 29 February, but reasonable hotel rooms close on 9 Feb.**

**→ abstract deadline is sunday 7 February**
**Do send abstracts, there is space in spare session and posters**

**ICHEP16 Chicago 3-10 August. abstract deadline of 7 February**
**Propose these abstracts:**

- **Mass measurements at FCC-ee (mz, mw, etc..)**
- **Asymmetry measurements at FCC-ee: is longitudinal polarization needed ?**
- **Higgs measurements at the FCC-ee, complementarity with FCC-hh**
- **Top-quark physics at FCC-ee, complementarity with FCC-hh**
- **New physics with FCC-ee: precision measurement and direct searches**
- **QCD studies at FCC-ee**
- **Flavour studies at FCC-ee**
- **Physics at FCC-ee and run plan**
- **MDI at FCC-ee**

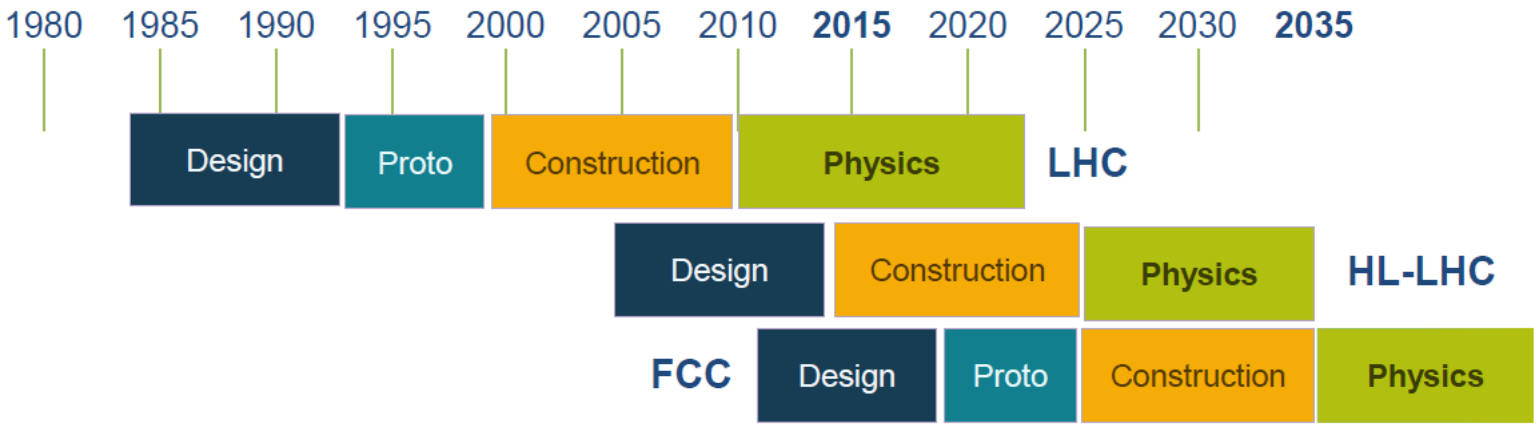
**Let us know if you would like to write one!**




**Will continue with mini-workshops…**

**Next plenary meeting in Q4 2016**

**Meanwhile, keep publishing!**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**Strong support from CERN DG :**

**FCC-ee study is very important for the future of the organization, keep working hard!**