

# Mini-workshop on FCC-ee Higgs Physics

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24<sup>th</sup> September 2015

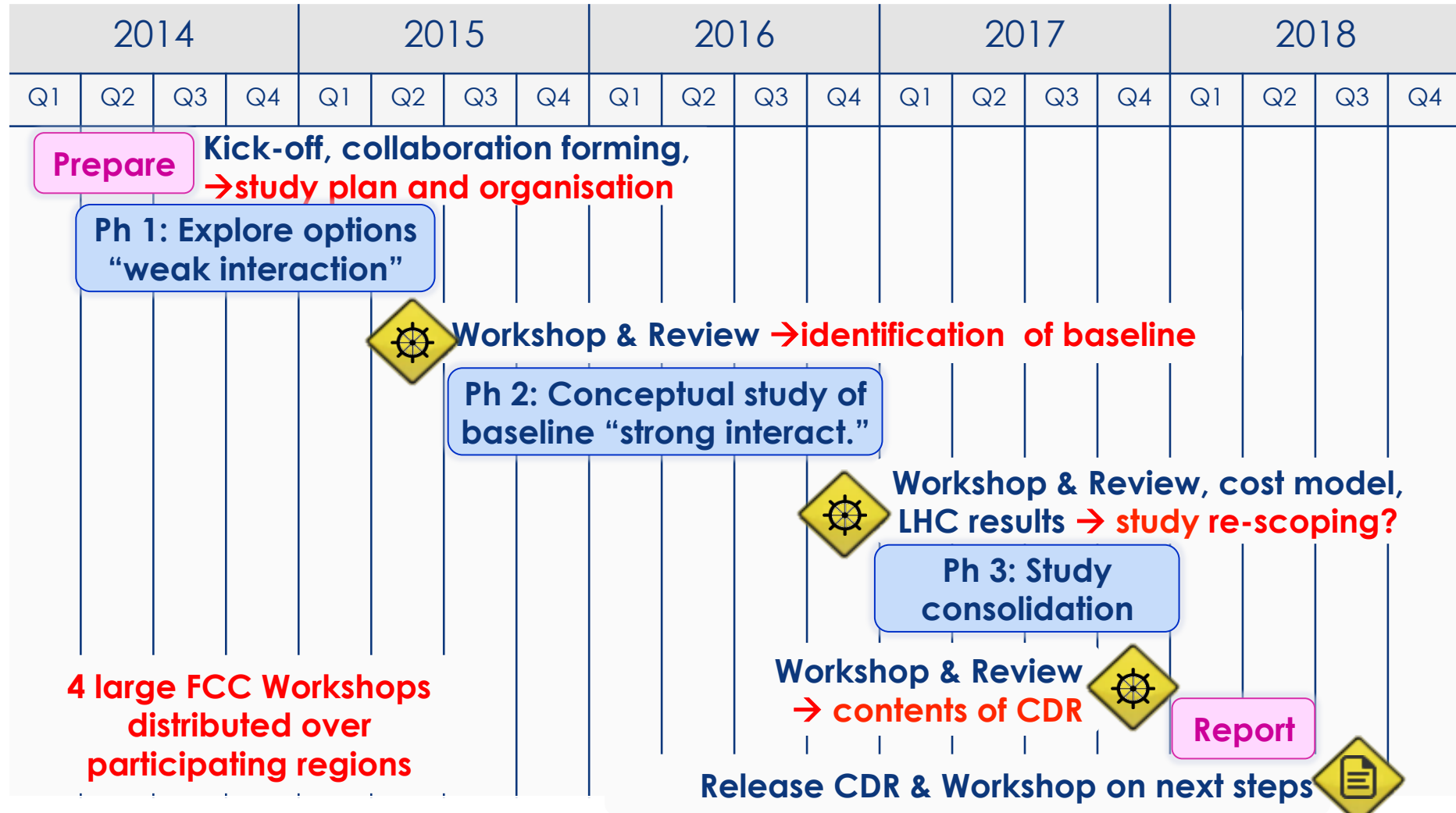
First FCC-ee workshop on Higgs Physics



What are the main goals of our workshop?

# Towards the CDR

Set the stage for the next 15 months



# Towards the CDR

The write-up provided by the workshop speakers will be a very important input to our intermediate FCC-ee physics report

- Your write-up will be also posted to the workshop agenda
- Thank you for your efforts!

Second mini-workshop in a year (or earlier if appropriate)

- Evaluate the progress
- Update and finalise the physics report

# Identify the experimental opportunities

## Overview of current FCC-ee Higgs results

- Higgs precision measurements

## Discussion of new ideas / results

- 1st generation fermion couplings, rare decays etc.

## Complementarity and synergy with other collider projects

- Complementarity between lepton and hadron colliders
- Synergies between different lepton collider studies

## Which precision to aim for in Higgs measurements

- Which models can we constrain, which precision is needed
- Interplay with other EW precision measurements
- What precision is needed for the direct top-Yukawa coupling

# Identify the experimental opportunities

## Theory input for precision measurements

- Experimental precision need to be matched to extract observables and for their interpretation
- Prospects on MC tools


## Benchmark processes for detector qualification

- One of the main goals of our experimental studies is to qualify the required FCC-ee detector design
- Identify the main physics drivers and the required detector properties

## Introduction to the analysis software for FCC-ee studies

- Important for newcomers and experts alike
- Common FCC software framework for our studies which go into the CDR

# Thursday morning

09:00	<b>Welcome and Introduction</b> <i>Salle Anderson, CERN</i>	<i>Krisztian PETERS</i> 09:00 - 09:20
	<b>Summary of FCC-ee Higgs results</b> <i>Salle Anderson, CERN</i>	<i>Markus KLUTE</i> 09:20 - 09:55
10:00	<b>Higgs Physics at the HL-LHC and complementarity to FCC-ee</b> <i>Salle Anderson, CERN</i>	<i>Lorenzo BIANCHINI</i> 09:55 - 10:30
11:00	<b>Higgs Physics at the FCC-hh and complementarity to FCC-ee</b> <i>Salle Anderson, CERN</i>	<i>Heather GRAY</i> 10:50 - 11:25
	<b>Higgs Physics at the ILC</b> <i>Salle Anderson, CERN</i>	<i>Tim BARKLOW</i> 11:25 - 12:00
12:00	<b>Muon Collider as a Higgs Factory</b> <i>Salle Anderson, CERN</i>	<i>Mark PALMER</i> 12:00 - 12:25
	<b>Comparing the Higgs Physics program at FCC-ee and Muon Collider</b> <i>Salle Anderson, CERN</i>	<i>Patrick JANOT</i>  12:25 - 12:50
13:00		

# Thursday afternoon

14:00	<b>Theory input for FCC-ee Higgs precision measurements</b>  <i>Salle Anderson, CERN</i>	<i>Ayres FREITAS</i>  14:00 - 14:45
15:00	<b>Precision EW measurements at FCC-ee</b>  <i>Salle Anderson, CERN</i>	<i>Alain BLONDEL</i>  14:45 - 15:20
16:00	<b>BSM models relevant for Higgs precision measurements</b>  <i>Salle Anderson, CERN</i>	<i>Francesco RIVA</i>  15:20 - 16:05
	<b>Rare and exotic Higgs decays</b>  <i>Salle Anderson, CERN</i>	<i>Julia SHELTON</i>  16:30 - 17:00
17:00	<b>Prospects on MC tools for FCC-ee</b>  <i>Salle Anderson, CERN</i>	<i>Olivier Pierre C MATTELAER</i>  17:00 - 17:30
	<b>Status of Analysis Software for FCC-ee studies</b>  <i>Salle Anderson, CERN</i>	<i>Colin BERNET</i>  17:30 - 18:00
18:00		



# Friday morning

09:00	<b>Benchmarks for FCC-ee detectors</b> <i>Salle Anderson, CERN</i>	<i>Krisztian PETERS</i> 09:00 - 09:20
	<b>FCC-ee (125 GeV): s-channel Higgs production</b> <i>Salle Anderson, CERN</i>	<i>David D'ENTERRIA</i> 09:20 - 09:40
	<b>Light quark couplings</b> <i>Salle Anderson, CERN</i>	<i>Rick Sandeepan GUPTA</i> 09:40 - 10:00
10:00	<b>CP measurements</b> <i>Salle Anderson, CERN</i>	<i>Aram APYAN</i> 10:00 - 10:20
	<b>Effective field theory approach</b> <i>Salle Anderson, CERN</i>	<i>Tevong YOU</i> 10:20 - 10:40
11:00	<b>Higgs and dark photon searches</b> <i>Salle Anderson, CERN</i>	<i>Matti HEIKINHEIMO</i> 11:00 - 11:20
	<b>Higgs production through sterile neutrinos</b> <i>Salle Anderson, CERN</i>	<i>Oliver FISCHER</i> 11:20 - 11:40
	<b>Workshop summary and discussion</b> <i>Salle Anderson, CERN</i>	<i>Markus KLUTE</i> 11:40 - 12:10
12:00		

# Dinner

The workshop dinner will be at 19:30 in the Meyrinoise restaurant



Please sign the sheet in the meeting room until lunch time, to have a better estimate for the final reservation

If you start from CERN: we meet at 19:00 in front of B40

In the coffee and lunch breaks please help yourself in the B40 cafeteria and the CERN restaurant