

# FCC HIGGS/EWSB WORKING GROUP MEETING

Conveners: Heather Gray, Roberto Contino

CERN, February 25, 2015

# Organizing the working group: The twiki page

*General twiki for 100TeV studies (includes BSM, Higgs/EWSB, Heavy Ions WGs)*



<https://twiki.cern.ch/twiki/bin/view/LHCPhysics/FutureHadroncollider>

*Twiki for our Higgs/EWSB working group*



<https://twiki.cern.ch/twiki/bin/view/LHCPhysics/HiggsEWSymmetry>

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TWiki > LHCPhysics Web > [FutureHadroncollider](#) > [HiggsEWSymmetry \(2015-02-23, RobertoContino\)](#)

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## Exploration of Electroweak Symmetry Breaking (incl. Higgs)

This sub-group of the FCC physics program focusses on studies of the Higgs and electroweak symmetry breaking. For now, we're brainstorming to determine the topics that we want to focus on and explore. Please feel free to add any relevant material to the twiki

Conveners: Roberto Contino and Heather Gray

### Topics and Focus Areas

List of topics under study

- [Precision Studies of Higgs Properties](#)
- [Rare Higgs production and decays](#)
- [Double Higgs Production](#)
- [WW scattering at high energy](#)
- [Additional BSM Higgs bosons: discovery reach and precision physics program](#)
- [New handles on the study of EWSB dynamics](#)



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### Precision Studies of Higgs properties

#### Ongoing studies

- Higgs cross sections at 100TeV (Baglio, Djouadi, Quevillon) [Show Details](#)
- Extrapolation of single Higgs analyses to 100TeV (Delmastro, Gray) [Show Details](#)
- Higgs studies with extreme kinematical configurations (Mangano, Shao) [Show Details](#)
- Off-shell Higgs measurements (Azatov, Salvioni) [Show Details](#)

#### Future studies

#### Literature

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### Precision Studies of Higgs properties

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### Precision Studies of Higgs properties

**Ongoing studies** Ongoing projects

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**Future studies** People involved

**Literature**

The diagram features two orange arrows. One arrow points from the 'Ongoing projects' label to the 'Higgs cross sections at 100TeV' study. A second arrow points from the 'People involved' label to the 'Off-shell Higgs measurements' study.

## Topics and Focus Areas

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### Precision Studies of Higgs properties

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**Future studies** People involved

**Literature**

Feel free to add new projects !



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### Precision Studies of Higgs properties

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- Higgs studies with extreme kinematical configurations (Mangano, Shao) [Hide Details](#)
  - Goal of the project:
  - Status:
  - [Slides](#)
- Off-shell Higgs measurements (Azatov, Salvioni) [Show Details](#)

← Info to be added by the authors of the project

#### Future studies

#### Literature

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Some topics are uncovered, we need people to join and study them

- Ex:**
- Extrapolation of single Higgs analyses to 100TeV (lots of channels, lot of work !)
  - Experimental study of production of Heavy Higgses (scalars)
  - WW scattering at high energies
  - ⋮

Other topics can/should be added: proposals for additional ones are welcome !



## Upcoming dates: meetings, workshops etc...

- **11-13 March 2015:** Workshop on "Higgs and BSM at 100 TeV"  
CERN, TH Auditorium  
<http://indico.cern.ch/event/352868/>
- **23-27 March 2015:** First Annual Meeting of the FCC study (hh, ee, he)  
Washington DC  
<http://indico.cern.ch/event/340703/>
- **⋮**
- **WG meetings, held regularly**
- **⋮**
- **End of 2015** Report on "Physics opportunities at 100 TeV"  
(first step towards a Conceptual Design Report for Future Circular Colliders)