

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

Convenors: Roberto Contino and Heather Gray

Topics and Focus Areas

- [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](#)

List of topics under study



Topics and Focus Areas

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TWiki > LHCPhysics Web > FutureHadroncollider > HiggsEWSymmetry > HiggsProperties (2015-02-24, RobertoContino)

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

Topics and Focus Areas

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TWiki > LHCPhysics Web > FutureHadroncollider > HiggsEWSymmetry > HiggsProperties (2015-02-24, RobertoContino)

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Ongoing projects



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Ongoing projects



Future studies

People involved



Literature

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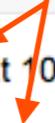
TWiki > LHCPhysics Web > FutureHadroncollider > HiggsEWSymmetry > HiggsProperties (2015-02-24, RobertoContino)

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Ongoing projects



Future studies

Feel free to add
new projects !

People involved



Literature

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TWiki > LHCPhysics Web > FutureHadroncollider > HiggsEWSymmetry > HiggsProperties (2015-02-24, RobertoContino)

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**
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- **End of 2015** Report on “Physics opportunities at 100 TeV”
(first step towards a Conceptual Design Report
for Future Circular Colliders)