

Invitation to the Higgs Working Group

Mitsuru Kakizaki (University of Toyama)
on behalf of the Higgs Working Group

February 16, 2013
HPNP2013, University of Toyama

Higgs Working Group

- The most important scientific breakthrough of 2012:
Discovery of a Higgs-like particle at the LHC
- In anticipation of such a breakthrough
the **Higgs Working Group** was launched in June 2012
[Predecessor: **Fat Higgs Working Group** (Jan – Mar 2012)]



Keyword: Higgs Physics as a Window to New Physics



New Physics

Organizer

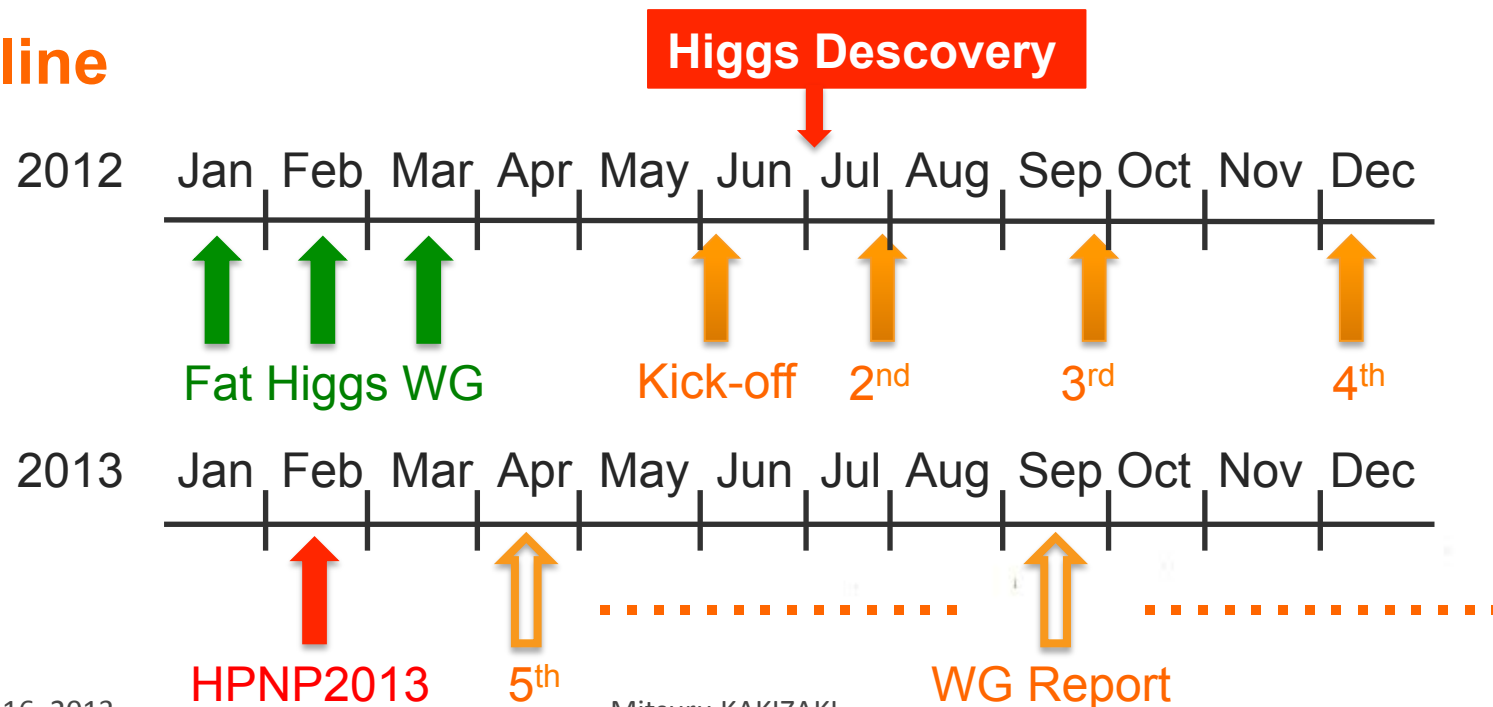
- Shinya Kanemura, Chair
- Tetsuo Shindou
- Mitsuru Kakizaki

Working Group Activities

Aim

- To bring together theorists to discuss the connection between **Higgs properties** and **New physics**
- To interact with experimentalists in particular of LHC and ILC
Prof. Hanagaki (LHC); Prof. Fujii, Dr. Tanabe (ILC)
- To complete our working group report

Timeline



Strategy for probing new physics with Higgs

Bottom-Up Approaches

- LHC searches
- ILC precision measurements
- Extended Higgs sector (Two Higgs doublets, Triplet Higgs, ...)

Dynamics of the Higgs Sector

- Weak Dynamics
- Strong Dynamics
- Composite

Higgs and New Phenomena

- Neutrino Mass
- Dark Matter
- Baryogenesis
- Inflation



Kick-off Meeting

- **Date:** June 2, 2012
- **Place:** Faculty of Science, University of Toyama
- **16 participants**

- | | |
|----------------|----------------|
| • M. Hashimoto | • T. Nabeshima |
| • R. Hosaka | • T. Shindou |
| • M. Kakizaki | • H. Sugiyama |
| • S. Kanemura | • H. Taniguchi |
| • M. Kikuchi | • T. Toma |
| • Y. Kikuta | • K. Tsumura |
| • N. Machida | • Y. Yagyu |
| • T. Matsui | • T. Yamada |



2nd Meeting

- **Date:** July 28-29, 2012
- **Place:** Faculty of Science, University of Toyama
- **25 participants**

- | | |
|----------------|----------------|
| • K. Fujii | • Y. Orikasa |
| • K. Hanagaki | • A. Santa |
| • R. Hosaka | • T. Shindou |
| • S. Iso | • H. Sugiyama |
| • M. Kakizaki | • H. Taniguchi |
| • S. Kawabata | • T. Toma |
| • S. Kanemura | • K. Tsumura |
| • M. Kikuchi | • R. Watanabe |
| • Y. Kikuta | • K. Yagyu |
| • N. Machida | • T. Yamada |
| • T. Matsui | • T. Yamashita |
| • T. Nabeshima | • H. Yokoya |
| • K. Nishiwaki | |



3rd Meeting

- **Date:** September 22-23, 2012
- **Place:** Faculty of Science, University of Toyama
- **24 participants**

- | | |
|----------------|----------------|
| • K. Fujii | • T. Shindou |
| • R. Hosaka | • H. Sugiyama |
| • M. Kakizaki | • H. Takano |
| • S. Kanemura | • T. Tanabe |
| • M. Kikuchi | • H. Taniguchi |
| • N. Machida | • T. Toma |
| • T. Matsui | • K. Tsumura |
| • T. Nabeshima | • R. Watanabe |
| • Y. Oriksa | • K. Yagyu |
| • A. Santa | • T. Yamada |
| • O. Seto | • T. Yamashita |
| • E. Senaha | • H. Yokoya |



4th Meeting

- **Date:** December 1-2, 2012
- **Place:** Faculty of Science, University of Toyama
- **23 participants**

- | | |
|----------------|----------------|
| • K. Fujii | • T. Shindou |
| • M. Hashimoto | • H. Sugiyama |
| • R. Hosaka | • H. Takano |
| • M. Kakizaki | • T. Tanabe |
| • S. Kanemura | • H. Taniguchi |
| • M. Kikuchi | • K. Tsumura |
| • N. Machida | • R. Watanabe |
| • T. Matsui | • K. Yagyu |
| • T. Nabeshima | • T. Yamada |
| • Y. Orikasa | • T. Yamashita |
| • A. Santa | • H. Yokoya |
| • O. Seto | |



Future

5th Meeting

- **Date:** April ??-??, 2013
- **Place:** Faculty of Science, University of Toyama
- ?? participants

Working Group Report

- will be released in September, 2013

**We encourage you to contribute to
Higgs Working Group activities!!
Join Us!!!**

