



2nd CFHEP symposium on circular collider physics

IHEP, Beijing. Aug. 11, 2014.

A few words about CFHEP



- Started Dec. 2013
- Coordinate international collaboration in the study of the physics for future circular colliders

<http://cfhep.ihep.ac.cn/index.htm>

<http://beijingcenterfuturecollider.wikispaces.com/home>

Visitor program



- Started early March 2014.
- About 50 visitors so far, each staying for a couple of weeks at least.
- More to come:

Name	Affiliation	Schedule	Office
Prof. Mariangela Lisanti	Princeton University	Oct. 25-Nov. 2	
Dr. Jack Kearney	University of Michigan	Oct. 19-Nov. 1	
Dr. Timothy Cohen	SLAC	Oct. 19-Nov. 1	
Prof. Kathryn Zurek	University of Michigan	Oct. 8-20	
Prof. Michele Papucci	University of Michigan	Oct. 8-20	
Dr. Simon Knapen	Rutgers University	Oct. 5-18	
Dr. Chris Brust	Perimeter Institute for Theoretical Physics	Oct. 5-18	
Prof. Ian Low	Argonne National Laboratory & Northwestern University	Sep. 8-19	
Prof. Masaaki Kuroda	Meijigakuin University	Sep. 9-22	
Prof. Wolfgang Kilian	University of Siegen	Aug. 22-Sep. 2	
Dr. Fabian Bach	DESY	Aug. 19-Sep. 2	

...

Activities at the center



- Lectures, seminars, visits to other institutions.

Week of August 4th Activities, time and location	
Monday	
Tuesday	
Wednesday	
Thursday	2:00 PM: Lecture on "the Phenomenology of the Higgs Boson", Location at the Conference Room on the 3rd Floor (usual place), by Stefania Gori (Perimeter Institute for Theoretical Physics, Canada).
Friday	10:00 AM: Lecture on "Goldstone Equivalence Theorem", Location at the Conference Room on the 3rd Floor (usual place); 3:00 PM: Colloquium on "Beyond the Higgs Boson: Further Questions and Expectations for the Large Hadron Collider", Location in the Main Building at Room C305; by Michael Peskin (SLAC National Accelerator Lab, US).
Weekend	

Week of July 14th Activities, time and location	
Monday	
Tuesday	Visit Tsinghua Univ.
Wednesday	10:00 am: "Modern Theory of Flavor, 126 GeV Scalar & the 100 TeV Collider" by Prof. Amarjit Soni 2:00 pm: "Review on Electroweak Measurements" by Prof. Ashutosh Kotwal 4:00 pm: Conveners meeting: Cosmo/Flavor/MC
Thursday	Visit Peking Univ. 2:00 pm: Conveners meeting: SM/Higgs/BSM 北京大学高能物理中心102会议室 (老化学楼东配楼102会议室)
Friday	10:00 am: Discussion, lead by Prof. Nima Arkani-Hamed 2:00 pm: Discussion, lead by Prof. Nima Arkani-Hamed
Weekend	



Most immediate deliverable

- Physics case for preCDR by the end of this year.
- Strong interest, many studies carried out or being finished.

Working groups



*Working Groups

Working groups of conceptual design report:

SM Tests (conveners: [Qing-Hong Cao](#) / [Li-Lin Yang](#) / [Zhao Li](#) / [Chong Sheng Li](#))

Higgs Physics (conveners:[Hong-Jian He](#) / [Shou-Hua Zhu](#) / [Tao Liu](#))

Beyond SM: SUSY (conveners: [Tianjun Li](#) / [Jin Min Yang](#))

Beyond SM: Non-SUSY (conveners: [Qi-Shu Yan](#) / [Jing Shu](#) / [Wen-Gan Ma](#) / [Yi Liao](#) / [Wei Liao](#))

Flavor Physics (conveners: [Cai-Dian Lu](#) / [Zong-Guo Si](#))

MC Tools (conveners: [Qi-Shu Yan](#) / [Jian-xiong Wang](#))

Cosmology Connection (conveners: [Xiao-Jun Bi](#) / [Yu-Feng Zhou](#))

Heavy ion physics (conveners: [Xin-Nian Wang](#) / [Qun Wang](#))

Working group reports



☆ Working Group Reports

Reports from working groups

Flavor: [Flavor working group report](#)

Comso: [dark matter](#), [baryogenesis](#)

MC tools: [MC tools](#)

SUSY: [SUSY](#)

Higgs: [Higgs](#)

Thanks all for the hard work!

<http://beijingcenterfuturecollider.wikispaces.com/Working+Group+Reports>

Physics case for pre-CDR



- Based on working group reports and other available results.
- A 50-60 page summary of the physics case.
- Goal of this work shop:
 - ▶ Work towards a draft

Goals of this workshop



- Survey of available results.
 - ▶ What is still needed and obtainable soon?

- Brain storming about the physics case.
 - ▶ What are the basic points (will go over the current thinking)?
 - ▶ Anything we should do differently.
 - ▶ What's still missing?

- Basic theme of every talk
 - ▶ Motivation for circular collider(s) ... from the point of view of
 - ▶ A lot of discussion center on this theme.

Format of the workshop



- After some perspective talks at the beginning.
- Sessions organized around subjects (working groups).
 - ▶ A few presentations + discussion.
- Evenings: more discussion and writing.
- Will have a preliminary draft by the end.