

# ICFA Beam Dynamics Workshop

## Accelerators for a Higgs Factory:

### Linear vs. Circular (HF2012)

*Agenda (rev. 11/05/2012)*

| <b>Wednesday, November 14, Room One West</b> |   |  |
|--|---|--|
| 08:00 – 09:00                                | Registration  |  |
| <b>Session 1</b>                             |   |  |
|  | <b><u>Introduction and physics</u></b> (Chair: Alain Blondel) |  |
| 09:00 – 09:05                                | Welcome (5')  | Pier Oddone (Fermilab)<br>Young-Kee Kim (Fermilab)<br>Fabio Cerutti (LBNL)<br>Chris Quigg (Fermilab) |
| 09:05 – 09:30                                | Strategy for Higgs study (20')                                |  |
| 09:30 – 10:10                                | Higgs at the LHC (30')  |  |
| 10:10 – 10:55                                | Higgs beyond the LHC – theories (30')                         |  |
| 10:55 – 11:15                                | Coffee (20')  |  |
| 11:15 – 12:00                                | Higgs beyond the LHC – experiments (30')                      | Patrick Janot (CERN)<br>Stuart Henderson (Fermilab)  |
| 12:00 – 12:30                                | Accelerators for a Higgs factory (20')                        |  |
| 12:30 – 14:00                                | Lunch   |  |
| <b>Session 2</b>                             |   |  |
|  | <b><u>Linear e+e- Higgs factories</u></b> (Chair: Jie Gao)    |  |
| 14:00 – 14:45                                | ILC as a Higgs factory (30')                                  | Nick Walker (DESY)<br>Daniel Schulte (CERN)  |
| 14:45 – 15:30                                | CLIC as a Higgs factory (30')                                 |  |
| 15:30 – 16:00                                | Group photo & Coffee (30')                                    |  |
| 16:00 – 16:45                                | SLC- & NLC-type Higgs factory (30')                           | Tor Raubenheimer (SLAC)<br>Marco Oriunno (SLAC)  |
| 16:45 – 17:30                                | Machine-detector interface for the ILC and CLIC (30')         |  |
| 17:30 – 19:30                                | Reception (Wilson Hall, 2 <sup>nd</sup> floor)                |  |

## Thursday, November 15, Room One West

### Session 3

|               |   |  |
|---------------|---|--|
|               | <b><u>Circular e+e- Higgs factories</u></b> (Chair: Daniel Schulte) |  |
| 09:00 – 09:40 | LEP3 and TLEP (25')   | Frank Zimmermann (CERN)<br>Katsunobu Oide (KEK)<br>Tanaji Sen (Fermilab) |
| 09:40 – 10:05 | SuperTristan (15')  |  |
| 10:05 – 10:30 | Fermilab site-filler (15')  |  |
| 10:30 – 11:00 | Coffee (30')  |  |
| 11:00 – 11:25 | IHEP Higgs factory (15')  | Qing Qin (IHEP)<br>Yunhai Cai (SLAC)<br>John Seeman (SLAC)               |
| 11:25 – 12:05 | LBNL/SLAC ring and lattice issues (25')                             |  |
| 12:05 – 12:30 | Topping up injection (15')  |  |

12:30 – 14:00

Lunch

### Session 4

|               |   |   |
|---------------|---|---|
|               | <b><u>Limits for circular e+e- colliders</u></b> (Chair: Alex Chao) |   |
| 14:00 – 14:30 | Beamstrahlung – calculations and cure (20')                         | Valery Telnov (BINP)<br>Marco Zanetti (MIT)<br>Kaoru Yokoya (KEK) |
| 14:30 – 15:00 | Beamstrahlung – simulations (20')                                   |   |
| 15:00 – 15:30 | Scaling law (20')   |   |
| 15:30 – 16:00 | Coffee (30')  |   |
| 16:00 – 16:30 | Beam-beam tune shift (20')  | Jie Gao (IHEP)<br>Andy Butterworth (CERN)<br>Nadine Kurita (SLAC) |
| 16:30 – 17:00 | Synchrotron radiation – RF (20')                                    |   |
| 17:00 – 17:30 | Synchrotron radiation – vacuum (20')                                |   |

18:30 – 20:30

Dinner (Users Center – Chez Leon)

## Friday, November 16, Room One West

### Session 5

|               |   |   |
|---------------|---|---|
|               | Chair: Weiren Chou<br><br><b><u>5A: Low emittance rings</u></b><br>Light sources (30')<br>Colliders (30')<br><br>10:30 – 11:00<br>Coffee (30')<br><br><b><u>5B: Muon collider as a Higgs factory</u></b><br>Physics of $\mu\mu \rightarrow$ Higgs (15')<br>Muon collider (30')<br>Background and machine-detector interface (15') |   |
| 09:00 – 09:45 |   | Riccardo Bartolini (Diamond)<br>Yoshihiro Funakoshi (KEK)                       |
| 09:45 – 10:30 |   |   |
| 11:00 – 11:20 |   | Tao Han (U. of Pittsburgh)<br>David Neuffer (Fermilab)<br>Ron Lipton (Fermilab) |
| 11:20 – 12:05 |   |   |
| 12:05 – 12:30 |   |   |
| 12:30 – 13:45 | Lunch   |   |

### Session 6

|               |   |   |
|---------------|---|---|
|               | <b><u>6A: <math>\gamma\gamma</math> collider as a Higgs factory</u></b> (Chair: Kaoru Yokoya)<br>Physics of $\gamma\gamma \rightarrow$ Higgs (15')<br>$\gamma\gamma$ collider (25')<br>Laser for CLIC-based $\gamma\gamma$ collider (15')<br>SAPPHIRE (15')<br><br>15:30 – 16:00<br>Wine & Cheese (30')<br><br><b><u>6B: Summary Talks (Joint with the Wine &amp; Cheese Seminar)</u></b> (Chair: John Campbell)<br>Higgs factory – physics (25')<br>Higgs factory – accelerators (35') |   |
| 13:45 – 14:10 |   | Mayda Velasco (Northwestern U.)<br>Tohru Takahashi (Hiroshima U.)<br>Andy Bayramian (LLNL)<br>Frank Zimmermann (CERN) |
| 14:10 – 14:45 |   |   |
| 14:45 – 15:10 |   |   |
| 15:10 – 15:30 |   |   |
| 16:00 – 16:25 |   | Alain Blondel (U. of Geneva)<br>Weiren Chou (Fermilab)  |
| 16:25 – 17:00 |   |   |
| 17:00         | Adjourn   |   |