

**55th ICFA Advanced Beam
Dynamics Workshop on High
Luminosity Circular e+e-
Colliders –Higgs Factory
(HF2014)**

Report of Contributions

Contribution ID: 0

Type: **not specified**

Welcome (5')

Presenter: Prof. WANG, Yifang (IHEP)

Contribution ID: 1

Type: **not specified**

Physics opportunities (40' +5')

Presenter: Prof. ARKANI-HAMED, Nima (IAS)

Contribution ID: 2

Type: **not specified**

A new paradigm: Role of electron-positron and hadron colliders (40' +5')

Presenter: Prof. 朱 (ZHU), 守华 (Shou-hua) (北京大学 (Peking Uni))

Contribution ID: 3

Type: **not specified**

Status of FCC-ee physics studies (40' +5')

Thursday, 9 October 2014 10:30 (45 minutes)

Presenter: BLONDEL, Alain (U. Geneva)

Session Classification: Plenary Session 2

Contribution ID: 4

Type: **not specified**

Status of CEPC physics and detector studies (40' +5')

Thursday, 9 October 2014 11:15 (45 minutes)

Presenter: Prof. GAO, Yuanning (THU)

Session Classification: Plenary Session 2

Contribution ID: 5

Type: **not specified**

Overview: FCC-ee (40' +5')

Thursday, 9 October 2014 14:00 (45 minutes)

Presenter: Dr ZIMMERMANN, Frank (CERN)

Session Classification: Plenary Session 3

Contribution ID: 6

Type: **not specified**

Overview: CEPC (40' +5')

Thursday, 9 October 2014 14:45 (45 minutes)

Presenter: Dr QIN, Qing (IHEP)

Session Classification: Plenary Session 3

Contribution ID: 7

Type: **not specified**

(1) Physics motivation and requirements

Thursday, 9 October 2014 16:00 (30 minutes)

Presenter: BLONDEL, Alain (U. Geneva)

Session Classification: Parallel Session 1

Contribution ID: 8

Type: **not specified**

(2) Choice of circumference, minimum & maximum energy, number of collision points, and target luminosity

Thursday, 9 October 2014 16:30 (30 minutes)

Presenter: Dr KORATZINOS, Michael (U. Geneva)

Session Classification: Parallel Session 1

Contribution ID: 9

Type: **not specified**

(3) Ring circumference and two rings vs one ring

Thursday, 9 October 2014 17:00 (30 minutes)

Presenter: Prof. TALMAN, Richard (Cornell U.)

Session Classification: Parallel Session 1

Contribution ID: **10**

Type: **not specified**

(1) Overall consideration, main challenges and goals

Thursday, 9 October 2014 16:00 (22 minutes)

Presenter: CAI, Yunhai (SLAC)

Session Classification: Parallel Session 1

Contribution ID: 11

Type: **not specified**

(2) Single ring multi-bunch operation and beam separation

Thursday, 9 October 2014 16:22 (22 minutes)

Presenter: Prof. TALMAN, Richard (Cornell U.)

Session Classification: Parallel Session 1

Contribution ID: 12

Type: **not specified**

(3) Challenges and status of the FCC-ee lattice design

Thursday, 9 October 2014 16:44 (22 minutes)

Presenter: Mr HARER, Bastian (CERN)

Session Classification: Parallel Session 1

Contribution ID: 13

Type: **not specified**

(4) Status of the CEPC lattice design

Thursday, 9 October 2014 17:06 (22 minutes)

Presenter: Ms GENG, Huiping (IHEP)

Session Classification: Parallel Session 1

Contribution ID: 14

Type: **not specified**

(1) Energy consumption and savings potential of CLIC

Thursday, 9 October 2014 18:00 (21 minutes)

Presenter: Dr LEBRUN, Philippe (CERN)

Session Classification: Special Joint Session with LCWS2014

Contribution ID: 15

Type: **not specified**

(2) A green CEPC using the power of nuclear waste

Thursday, 9 October 2014 18:21 (21 minutes)

Presenter: Dr LIU, Zhenchao (IHEP)

Session Classification: Special Joint Session with LCWS2014

Contribution ID: 16

Type: **not specified**

(3) Sustainability for bosons: the need for an energy program for a future Higgs factory

Thursday, 9 October 2014 18:42 (21 minutes)

Presenter: Mr PARKER, Thomas (ESS)

Session Classification: Special Joint Session with LCWS2014

Contribution ID: 17

Type: **not specified**

(4) HEP future: to be green, or not to be?

Thursday, 9 October 2014 19:03 (21 minutes)

Presenter: Dr PERRET-GALLIX, Denis (CERN)

Session Classification: Special Joint Session with LCWS2014

Contribution ID: **18**

Type: **not specified**

(5) Current status of Green-ILC activities in Japan

Thursday, 9 October 2014 19:24 (21 minutes)

Presenter: TAKAYUKI SAEKI (KEK)

Session Classification: Special Joint Session with LCWS2014

Contribution ID: **19**

Type: **not specified**

(4) Beam-beam effects in high-energy colliders: crab waist vs. head-on

Friday, 10 October 2014 08:30 (30 minutes)

Presenter: SHATILOV, Dmitry (BINP)

Session Classification: Parallel Session 2

Contribution ID: 20

Type: **not specified**

(5) Optimizing beam intensity, number of bunches, bunch charge, and emittance

Friday, 10 October 2014 09:00 (30 minutes)

Presenter: Prof. ZHANG, Chuang (IHEP)

Session Classification: Parallel Session 2

Contribution ID: 21

Type: **not specified**

(6) Polarization issues in FCC-ee collider

Friday, 10 October 2014 09:30 (30 minutes)

Presenter: GIANFELICE, Eliana (FNAL)

Session Classification: Parallel Session 2

Contribution ID: 22

Type: **not specified**

(5) Analysis of nonlinear dynamics

Friday, 10 October 2014 08:30 (22 minutes)

Presenter: YUNHAI CAI (SLAC)

Session Classification: Parallel Session 2

Contribution ID: 23

Type: **not specified**

(6) Dynamic aperture optimization in SuperKEKB

Friday, 10 October 2014 08:52 (22 minutes)

Presenter: Dr OHNISHI, Yuki Yoshi (KEK)

Session Classification: Parallel Session 2

Contribution ID: 24

Type: **not specified**

(7) The effect of IR imperfection on dynamic aperture in SuperKEKB / dynamic aperture study of CEPC

Friday, 10 October 2014 09:14 (22 minutes)

Presenter: SUGIMOTO, Hiroshi (KEK)

Session Classification: Parallel Session 2

Contribution ID: 25

Type: **not specified**

(8) Beam lifetime and Injection consideration

Friday, 10 October 2014 09:36 (22 minutes)

Presenter: Mr CUI, Xiaohao (IHEP)

Session Classification: Parallel Session 2

Contribution ID: 26

Type: **not specified**

(7) Constraints on the FCC-ee lattice from the compatibility with the FCC hadron collider

Friday, 10 October 2014 10:30 (30 minutes)

Presenter: Mr HARER, Bastian (CERN)

Session Classification: Parallel Session 3

Contribution ID: 27

Type: **not specified**

(8) Polarization issues and schemes for energy calibration

Friday, 10 October 2014 11:00 (30 minutes)

Presenter: KOOP, Ivan (BINP)

Session Classification: Parallel Session 3

Contribution ID: 28

Type: **not specified**

(9) Optimizing costs of construction and operation, possible construction time line

Friday, 10 October 2014 11:30 (30 minutes)

Presenter: Dr CHOU, Weiren (FNAL)

Session Classification: Parallel Session 3

Contribution ID: 29

Type: **not specified**

(9) CEPC IR optics

Friday, 10 October 2014 10:30 (30 minutes)

Presenter: Mr WANG, Yiwei (IHEP)

Session Classification: Parallel Session 3

Contribution ID: **30**

Type: **not specified**

(10) Status of the FCC-ee interaction region design

Friday, 10 October 2014 11:00 (30 minutes)

Presenter: Mr MARTIN, Roman (CERN)

Session Classification: Parallel Session 3

Contribution ID: **31**

Type: **not specified**

(11) Crab waist interaction region

Friday, 10 October 2014 11:30 (30 minutes)

Presenter: Dr BOGOMYAGKOV, Anton (BINP)

Session Classification: Parallel Session 3

Contribution ID: 32

Type: **not specified**

(12) Beamstrahlung and energy acceptance

Friday, 10 October 2014 14:00 (22 minutes)

Presenter: Dr OHMI, Kazuhito (KEK)

Session Classification: Parallel Session 4

Contribution ID: 33

Type: **not specified**

(13) Interaction region magnets

Friday, 10 October 2014 14:22 (22 minutes)

Presenter: Dr PAOLONI, Eugenio (INFN)

Session Classification: Parallel Session 4

Contribution ID: 34

Type: **not specified**

(14) Beam-beam effects in the CEPC

Friday, 10 October 2014 14:44 (22 minutes)

Presenter: Mr ZHANG, Yuan (IHEP)

Session Classification: Parallel Session 4

Contribution ID: 35

Type: **not specified**

(15) Wide-band long-focus optics for detection systems infrared synchrotron accelerator diagnostics

Friday, 10 October 2014 15:06 (22 minutes)

Presenter: Dr MALTSEV, Anatoly (JINR)

Session Classification: Parallel Session 4

Contribution ID: 36

Type: **not specified**

(1) SuperKEKB background simulations (including issues for detector shielding)

Friday, 10 October 2014 13:30 (45 minutes)

Presenter: NAKAYAMA, Hiroyuki (KEK)

Session Classification: Parallel Session 4

Contribution ID: 37

Type: **not specified**

(2) Beam-beam limit vs. number of IPs and energy II: scaling law

Friday, 10 October 2014 14:15 (45 minutes)

Presenter: XIAO, Ming (IHEP)

Session Classification: Parallel Session 4

Contribution ID: 38

Type: **not specified**

(3) Beam-beam limit vs. number of IPs and energy I: beam-beam simulation

Friday, 10 October 2014 16:00 (45 minutes)

Presenter: Dr OHMI, Kazuhito (KEK)

Session Classification: Parallel Session 5

Contribution ID: 39

Type: **not specified**

(4) Long-range beam-beam interaction with the bunch train operation

Friday, 10 October 2014 16:45 (45 minutes)

Presenter: Mr RICE, David (Cornell U.)

Session Classification: Parallel Session 5

Contribution ID: 40

Type: **not specified**

(1) Monte-Carlo simulation of synchrotron radiation in the design of CEPC vacuum chamber

Friday, 10 October 2014 16:00 (22 minutes)

Presenter: Mr MA, Zhongjian (IHEP)

Session Classification: Parallel Session 5

Contribution ID: 41

Type: **not specified**

(2) Vacuum system requirements for a HF e⁺e⁻ accelerator

Friday, 10 October 2014 16:22 (22 minutes)

Presenter: Mr KERSEVAN, Roberto (CERN)

Session Classification: Parallel Session 5

Contribution ID: 42

Type: **not specified**

(3) Synchrotron radiation effects in the HF injector

Friday, 10 October 2014 16:44 (22 minutes)

Presenter: Dr PAPAPHILIPPOU, Yannis (CERN)

Session Classification: Parallel Session 5

Contribution ID: 43

Type: **not specified**

(4) Shielding of Electronics in the Tunnel

Friday, 10 October 2014 17:06 (22 minutes)

Presenter: ESPOSITO, Luigi Salvatore (CERN)

Session Classification: Parallel Session 5

Contribution ID: 44

Type: **not specified**

(5) Choice of L* I: SR and other issues (Joint with WG4)

Saturday, 11 October 2014 08:30 (30 minutes)

Presenter: SULLIVAN, Michael (SLAC)

Session Classification: Jointed Session 6

Contribution ID: 45

Type: **not specified**

(6) Choice of L^* II: IR optics and dynamic aperture

Saturday, 11 October 2014 09:00 (30 minutes)

Presenter: Dr LEVICHEV, Eugene (BINP)

Session Classification: Jointed Session 6

Contribution ID: 46

Type: **not specified**

(7) Choice of L^* III: requirement from detector

Saturday, 11 October 2014 09:30 (30 minutes)

Presenter: Dr LI, Gang (IHEP)

Session Classification: Jointed Session 6

Contribution ID: 49

Type: **not specified**

(7) Synchrotron radiation absorption and vacuum issues in the IR

Saturday, 11 October 2014 09:14 (22 minutes)

Presenter: Dr SEEMAN, John (SLAC)

Session Classification: Jointed Session 6

Contribution ID: 50

Type: **not specified**

(8) Infrared synchrotron methods and systems for monitoring and controlling particle beams in real time

Saturday, 11 October 2014 09:36 (22 minutes)

Presenter: Ms MALTSEVA, Marina (TENZOR)

Session Classification: Jointed Session 6

Contribution ID: 51

Type: **not specified**

(8) Lost particles in the IR and Touschek effects

Saturday, 11 October 2014 10:30 (45 minutes)

Presenter: Dr BOSCOLO, Manuela (INFN)

Session Classification: Parallel Session 7

Contribution ID: 52

Type: **not specified**

(9) Detector beam background simulations for CEPC

Saturday, 11 October 2014 11:15 (45 minutes)

Presenter: Dr ZHU, Hongbo (IHEP)

Session Classification: Parallel Session 7

Contribution ID: 53

Type: **not specified**

(1) General approach to FCC SRF system

Saturday, 11 October 2014 10:30 (22 minutes)

Presenters: ERK JENSEN (CERN); Dr ZIMMERMANN, Frank (CERN)

Session Classification: Parallel Session 7

Contribution ID: 54

Type: **not specified**

(2) General approach to CEPC SRF system

Saturday, 11 October 2014 10:52 (22 minutes)

Presenter: Dr ZHAI, Jiyuan (IHEP)

Session Classification: Parallel Session 7

Contribution ID: 55

Type: **not specified**

(3) 704 MHz BNL3 cavity as an option for CEPC/FCC

Saturday, 11 October 2014 11:14 (20 minutes)

Presenter: WENCAI XU (BNL)

Session Classification: Parallel Session 7

Contribution ID: 56

Type: **not specified**

(4) Discussion

Saturday, 11 October 2014 11:34 (22 minutes)

Session Classification: Parallel Session 7

Contribution ID: 57

Type: **not specified**

(5) High power coupler

Saturday, 11 October 2014 14:00 (22 minutes)

Presenter: KAKO, Eiji (KEK)

Session Classification: Parallel Session 8

Contribution ID: 58

Type: **not specified**

(6) HOM damper hardware considerations for future energy frontier circular colliders

Saturday, 11 October 2014 14:22 (22 minutes)

Presenter: Dr BELOMESTNYKH, Sergey (BNL)

Session Classification: Parallel Session 8

Contribution ID: 59

Type: **not specified**

(7) Tuners, operating experience and performance recovery

Saturday, 11 October 2014 14:44 (22 minutes)

Presenter: Prof. MORITA, Yoshiyuki (KEK)

Session Classification: Parallel Session 8

Contribution ID: **60**

Type: **not specified**

(8) Discussion

Saturday, 11 October 2014 15:06 (22 minutes)

Session Classification: Parallel Session 8

Contribution ID: **61**

Type: **not specified**

(1) CEPC injector

Saturday, 11 October 2014 14:00 (22 minutes)

Presenter: Prof. ZHANG, Chuang (IHEP)

Session Classification: Parallel Session 8

Contribution ID: **62**

Type: **not specified**

(2) FCC-ee injector

Saturday, 11 October 2014 14:22 (22 minutes)

Presenter: Dr PAPAPHILIPPOU, Yannis (CERN)

Session Classification: Parallel Session 8

Contribution ID: 63

Type: **not specified**

(3) Maintaining polarization in synchrotrons

Saturday, 11 October 2014 14:44 (22 minutes)

Presenter: KOOP, Ivan (BINP)

Session Classification: Parallel Session 8

Contribution ID: **64**

Type: **not specified**

(4) Discussion

Saturday, 11 October 2014 15:06 (22 minutes)

Session Classification: Parallel Session 8

Contribution ID: 65

Type: **not specified**

(5) Topoff injection at PEP2

Saturday, 11 October 2014 16:00 (22 minutes)

Presenter: Dr SEEMAN, John (SLAC)

Session Classification: Parallel Session 9

Contribution ID: **66**

Type: **not specified**

(6) Injection with Pretzels at CESR

Saturday, 11 October 2014 16:22 (22 minutes)

Presenter: Mr RICE, David (Cornell U.)

Session Classification: Parallel Session 9

Contribution ID: 67

Type: **not specified**

(7) Lattice optimization for Top-Up injection

Saturday, 11 October 2014 16:44 (22 minutes)

Presenter: Prof. TALMAN, Richard (Cornell U.)

Session Classification: Parallel Session 9

Contribution ID: **68**

Type: **not specified**

(8) Discussion

Saturday, 11 October 2014 17:06 (22 minutes)

Session Classification: Parallel Session 9

Contribution ID: 69

Type: **not specified**

(1) Impedance and collective effects of CEPC

Saturday, 11 October 2014 16:00 (45 minutes)

Presenter: Ms WANG, Na (IHEP)

Session Classification: Parallel Session 9

Contribution ID: 70

Type: **not specified**

(2) Discussion

Saturday, 11 October 2014 16:45 (45 minutes)

Session Classification: Parallel Session 9

Contribution ID: 71

Type: **not specified**

(1) Transverse polarization for energy calibration at Z-peak

Sunday, 12 October 2014 08:30 (22 minutes)

Presenter: Dr KORATZINOS, Michael (U. Geneva)

Session Classification: Parallel Session 10

Contribution ID: 72

Type: **not specified**

(2) Longitudinal polarization and acceleration of polarized beams

Sunday, 12 October 2014 08:52 (22 minutes)

Presenter: KOOP, Ivan (BINP)

Session Classification: Parallel Session 10

Contribution ID: 73

Type: **not specified**

(3) FCC-ee beam energy measurement suggestion

Sunday, 12 October 2014 09:14 (22 minutes)

Presenter: MUCHNOI, Nickolai (BINP)

Session Classification: Parallel Session 10

Contribution ID: 74

Type: **not specified**

(4) Possible applications of wave-beam interaction for energy measurement and obtaining of polarization at FCC e+e-

Sunday, 12 October 2014 09:36 (22 minutes)

Primary author: Dr NIKITIN, Sergei (BINP)

Presenter: Dr NIKITIN, Sergei (BINP)

Session Classification: Parallel Session 10

Contribution ID: 75

Type: **not specified**

(1) Lessons learned from the B-Factories and implications for a high-luminosity circular e⁺e⁻ Higgs factory

Sunday, 12 October 2014 08:30 (30 minutes)

Presenter: Prof. FUNAKOSHI, Yoshihiro (KEK)

Session Classification: Parallel Session 10

Contribution ID: 76

Type: **not specified**

(2) Instrumentation and control at large colliders

Sunday, 12 October 2014 09:00 (30 minutes)

Presenter: WENDT, Manfred (CERN)

Session Classification: Parallel Session 10

Contribution ID: 77

Type: **not specified**

(3) Beam instrumentation of CEPC

Sunday, 12 October 2014 09:50 (30 minutes)

Presenter: Dr YUE, Junhui (IHEP)

Session Classification: Parallel Session 10

Contribution ID: 78

Type: **not specified**

WG 1

Sunday, 12 October 2014 11:15 (15 minutes)

Presenters: Dr LEVICHEV, Eugene (BINP); Dr ZIMMERMANN, Frank (CERN)

Session Classification: Summary Session 1 (Chair: Qing Qin)

Contribution ID: 79

Type: **not specified**

WG 2

Sunday, 12 October 2014 14:00 (15 minutes)

Presenters: Dr OHMI, Kazuhito (KEK); Dr CAI, Yunhai (SLAC)

Session Classification: Summary Session 2 (Chair: Qing Qin)

Contribution ID: **80**

Type: **not specified**

WG 3

Sunday, 12 October 2014 14:15 (15 minutes)

Presenters: SULLIVAN, Michael (SLAC); Prof. FUNAKOSHI, Yoshihiro (KEK)

Session Classification: Summary Session 2 (Chair: Qing Qin)

Contribution ID: **81**

Type: **not specified**

WG 4

Sunday, 12 October 2014 14:30 (15 minutes)

Presenters: Dr SEEMAN, John (SLAC); Dr BIAGINI, Maria (INFN)

Session Classification: Summary Session 2 (Chair: Qing Qin)

Contribution ID: **82**

Type: **not specified**

WG 5

Sunday, 12 October 2014 14:45 (15 minutes)

Presenters: Dr BELOMESTNYKH, Sergey (BNL); Prof. MORITA, Yoshiyuki (KEK)

Session Classification: Summary Session 2 (Chair: Qing Qin)

Contribution ID: **83**

Type: **not specified**

WG 6

Sunday, 12 October 2014 15:00 (15 minutes)

Presenters: Mr RICE, David (U. Cornell); Dr PAPAPHILIPPOU, Yannis (CERN)

Session Classification: Summary Session 2 (Chair: Qing Qin)

Contribution ID: **84**

Type: **not specified**

WG 7

Sunday, 12 October 2014 15:15 (15 minutes)

Presenters: XU, Gang (IHEP); Dr BYRD, John (LBL)

Session Classification: Summary Session 2 (Chair: Qing Qin)

Contribution ID: 85

Type: **not specified**

WG 8

Sunday, 12 October 2014 16:00 (15 minutes)

Presenter: KOOP, Ivan (BINP)

Session Classification: Summary Session 3 (Chair: Frank Zimmermann)

Contribution ID: **86**

Type: **not specified**

WG 9

Sunday, 12 October 2014 16:15 (15 minutes)

Presenters: Dr SCHMICKLER, Hermann (CERN); Dr MINTY, Michiko (BNL)

Session Classification: Summary Session 3 (Chair: Frank Zimmermann)

Contribution ID: 87

Type: **not specified**

WG 10

Sunday, 12 October 2014 16:30 (15 minutes)

Presenter: Dr PEGGS, Stephen (BNL)

Session Classification: Summary Session 3 (Chair: Frank Zimmermann)

Contribution ID: **88**

Type: **not specified**

Welcome and introduction of IHEP(45')

Thursday, 9 October 2014 08:30 (45 minutes)

Presenter: Prof. WANG, Yifang (IHEP)

Session Classification: Plenary Session 1

Contribution ID: 90

Type: **not specified**

A new paradigm: Role of electron-positron and hadron colliders (40' +5')

Thursday, 9 October 2014 09:20 (45 minutes)

Presenter: Prof. ZHU, Shouhua (PKU)

Session Classification: Plenary Session 1

Contribution ID: **92**

Type: **not specified**

Physics opportunities

Sunday, 12 October 2014 10:30 (45 minutes)

Presenter: Prof. ARKANI-HAMED, Nima (IAS)

Session Classification: Summary Session 1 (Chair: Qing Qin)

Contribution ID: 93

Type: **not specified**

Closing Remarks

Sunday, 12 October 2014 16:45 (5 minutes)

Presenter: Dr CHOU, Weiren (FNAL)