

# INTERNATIONAL WORKSHOP ON HIGH ENERGY CIRCULAR ELECTRON POSITRON COLLIDER

November 6-8, 2017  
IHEP, Beijing



*Meeting Manual*  
*Website: [cepcws17.ihep.ac.cn](http://cepcws17.ihep.ac.cn)*

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## I. About the CEPC

**We appreciate your participation to [International Workshop on High Energy Circular Electron Positron Collider \(CEPC\) in Beijing on Nov. 6-8, 2017.](#)**

The International Workshop on the CEPC aims at gathering scientists around the world to study the Circular Electron Positron Collider (CEPC) as a Higgs factory. The focuses will be the measurement of the Higgs properties with high precision, probing new physics through the Higgs boson, to study the full spectrum of the physics cases, to report on the conceptual design of the CEPC accelerator and the detector, as well as the simulation studies and the R&D of critical technologies. The possible upgrade path of the CEPC, including a high energy Super proton-proton Collider (SppC), will be explored.

One main purpose of the workshop is to make the CEPC study much more international by having broad participation and contributions globally, and to elevate the CEPC study group to an international organization.

## II. Committees

### International Advisory Committee:

Young-Kee Kim (Chair)	U. Chicago
Barry Barish	Caltech
Hesheng Chen	IHEP
Michael Davier	LAL
Brain Foster	Oxford
Rohini Godbole	CHEP, Indian Institute of Science
David Gross	UC Santa Barbara
George Hou	Taiwan U.
Peter Jenni	CERN
Eugene Levichev	BINP
Lucie Linssen	CERN
Joe Lykken	Fermilab
Luciano Maiani	Sapienza University of Rome
Michelangelo Mangano	CERN
Hitoshi Murayama	UC Berkeley/IPMU
Katsunobu Oide	KEK
Robert Palmer	BNL
John Seeman	SLAC
Ian Shipsey	Oxford
Steinar Stapnes	CERN
Geoffrey Taylor	U. Melbourne
Henry Tye	IAS, HKUST
Yifang Wang	IHEP
Harry Weerts	ANL

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## Local Organization Committee (LOC):

Xinchou Lou (Chair)	IHEP
Qinghong Cao	PKU
Joao Guimaraes Costa	IHEP
Jie Gao	IHEP
Yuanning Gao	THU
Hongjian He	SJTU
Xiaogang He	SJTU
Shan Jin	Nanjing U.
Gang Li	IHEP
Jianbei Liu	USTC
Yajun Mao	PKU
Qing Qin	IHEP
Manqi Ruan	IHEP
Jingyu Tang	IHEP
Meng Wang	SDU
Liantao Wang	U. Chicago
Nu Xu	CCNU
Haijun Yang	SJTU
Hongbo Zhu	IHEP

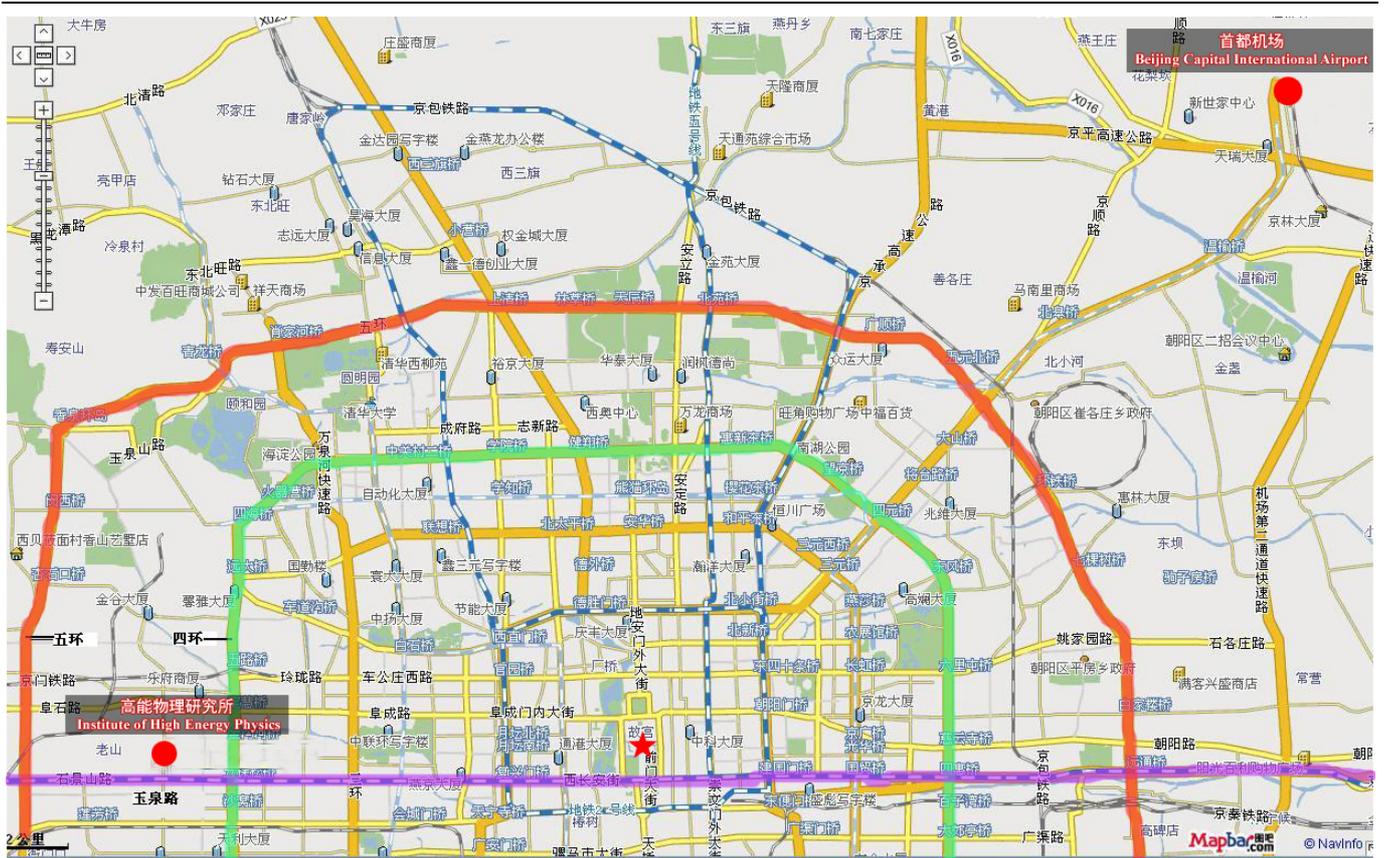
## Conference Secretaries:

Ms. Huan Xing	cepews17@ihep.ac.cn	+86 10 8823 6054
Ms. Yaru Wu		
Dr. Gang Li		

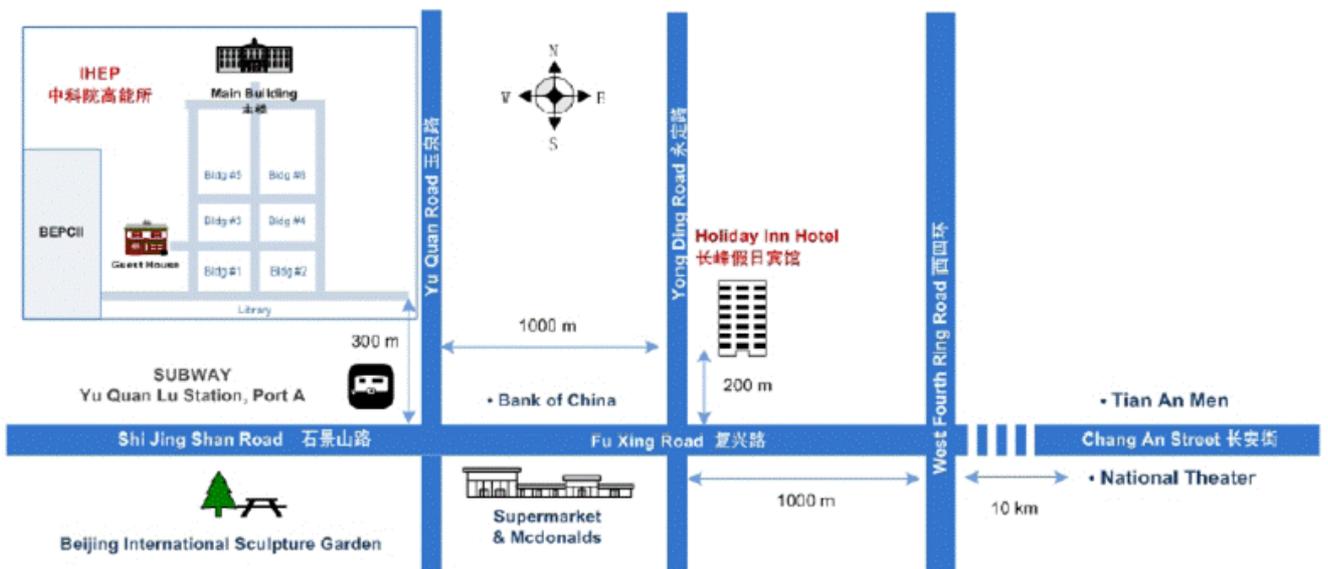
## III. General Information

**LOCATION:** 19B Yuquan Road, Shijingshan District, Beijing, China  
北京市石景山区玉泉路19号

- ◆ Plenary sessions: Mainbuilding, IHEP (高能所主楼)
- ◆ Parallel sessions: Mainbuilding, IHEP (高能所主楼)

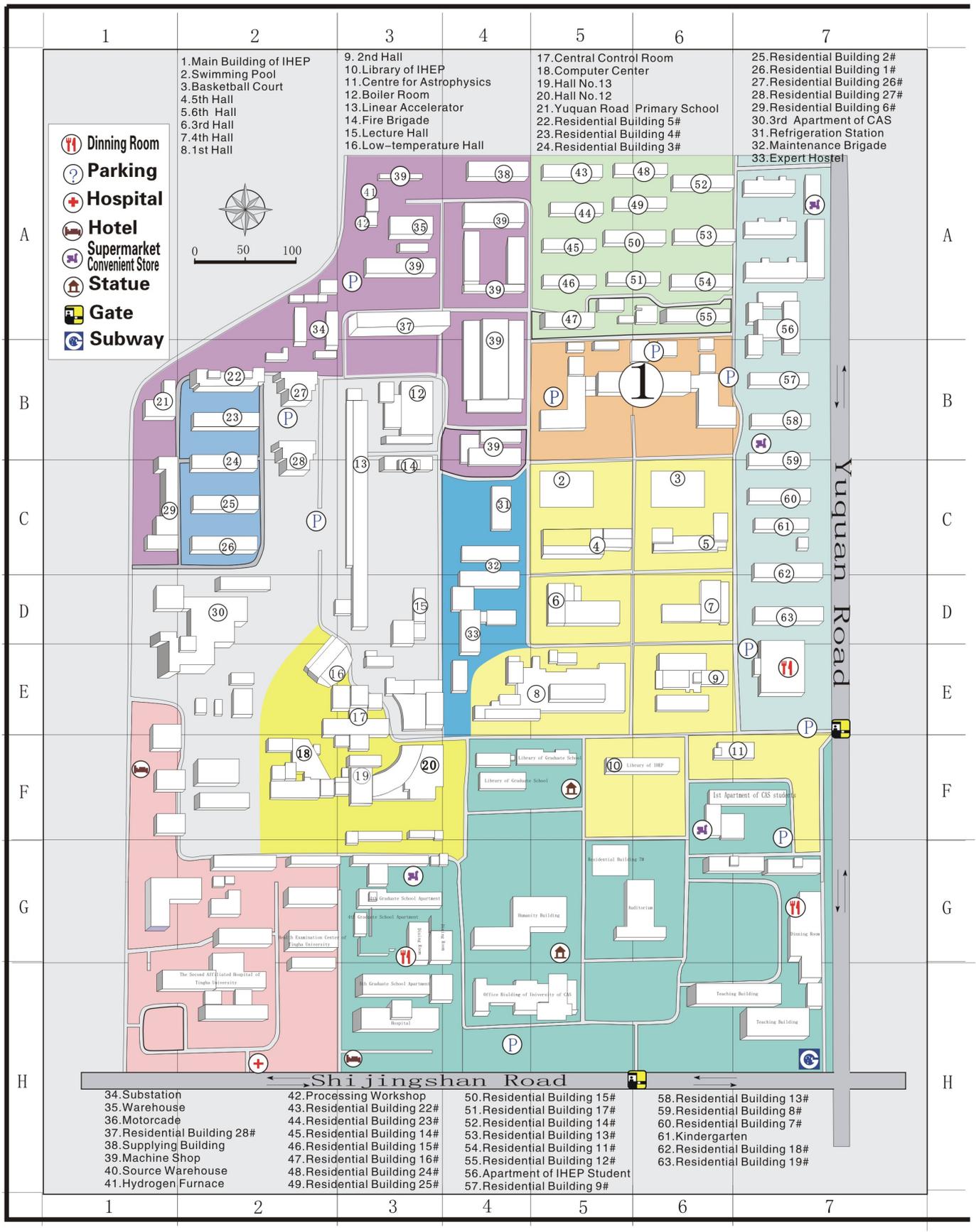


IHEP in relation to Beijing Capital International Airport



Map near IHEP and Holiday Inn Hotel

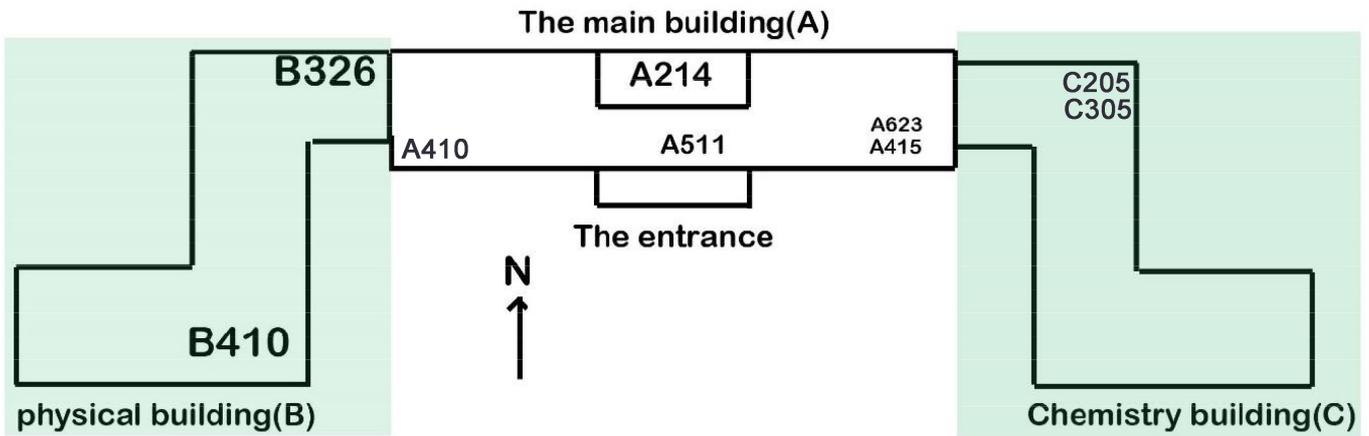
IHEP and Holiday Inn, with surroundings



IHEP Campus

**REGISTRATION DESK:**

- A214, Mainbuilding, IHEP
- Nov. 6 (Monday) at 8:00 – 8:30 AM



- Notes:
- A214            2nd floor
  - A305/B326    3rd floor
  - A415            4th floor
  - A511            5th floor
  - A623            6th floor

**WIFI CONNECTION (Nov. 6 - 8)**

- Conference ID: CEPC
- Open a browser and access to any web page, and then according to clew for wireless network registration.
- Please fill in the personal information according to the following tips.

**用户类型**  
User Type

[所外来访人员](#)  
Visitor

[本所职工或学生](#)  
Staff of IHEP

请首先选择您的用户类型，然后在右侧表单中填写您的个人信息以及申请使用网络的截止日期。

Please choose your user type, then fills in your individual information and the deadline you using the network in the right table.

姓名(Name):	<input type="text"/>
工作单位(Affiliation):	<input type="text"/>
联系电话(Telephone):	<input type="text"/>
E-mail地址(Email):	<input type="text"/>
网卡地址:(帮助) MAC Address:(help)	<input type="text"/>
会议代码(如果有):(帮助) Conference ID(if applicable):help	<input type="text" value="CEPC"/>
网络使用截止日期:(帮助) Deadline of using network:(help)	<input type="text"/> Year <input type="text"/> Month <input type="text"/> Day
访问目的: Purpose of Visit IHEP:	<input type="text"/>
高能所联系人姓名: Name of IHEP Contact Person:	<input type="text"/>
高能所联系人电话: Tel of IHEP Contact Person:	<input type="text"/>
高能所联系人Email地址: Email address of Contact Person:	<input type="text"/>

**3. submit** →

## Transportation

IHEP is located 45 km from the Beijing International Airport. It is strongly suggest to take taxi. You can get a taxi right outside the arrival terminals. Taxies wait there in line. The normal taxi driver will not soliciting business in person at the Airport arrival terminals hall.

Transportation from Beijing Airport to your hotel:

➤ (1) By taxi:

You can get a taxi right outside the arrival terminals. It takes 40- 45 minutes from the airport to the Chang-Feng Holiday inn or the Wanda Realm Beijing . The fare is about 25USD. If you take the Taxi to the Hotel, please show the following tag ① or ②to the taxi driver.

➤ (2) By Subway:

You can take Beijing Subway from the Airport Station to Dongzhimen Station, from which transfer to line 2. Then make another change from line 2 to line 1 at Jianguomen Station, Take the direction to Ping Guo Yuan and stop off at Yuquanlu Station. Take the north-west exit (Port A) and the IHEP campus is just at the north-west corner of the traffic cross. You can take the southern gate ( 300m west to the Subway Port A) 【MAP】



➤ (3) Airport shuttle bus:

You also can take airport shuttle bus from the airport to the Gong Zhu Fen bus station. The fare is 16RMB (2.4USD). Then you can take taxi to the Hotel or the Guest House. The fare is about 25RMB (3.5 USD). If you take the airport shuttle bus to Gong Zhu Fen, please show the following tag ③ to the check-in staff. When you arrive to Gong Zhu Fen, you need to take a taxi to the Hotel, please show the tag ① or ② to the taxi driver. 【MAP】



➤ If you take taxi, please show this to the taxi driver.

① 请送我到永定路的长峰假日酒店

Please send me to Chang-Feng Holiday Inn at Yong Ding Lu Street. r

② 请送我到玉泉路（19号乙）高能物理研究所的专家招待所

Please send me to the IHEP Guest House at YU Quan Lu Street.

➤ If you take airport shuttle bus, please show this to the airport staff or any one near by you.

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③请告诉我，在哪里乘民航班车去公主坟

Please send me where the airport shuttle bus to Gong Zhu Fen is.

**Emergency Contact Information:**

If you have any problems, you may call the following members of the Organization Committee,

- Email: cepcws17@ihep.ac.cn
- Dr Gang Li : 86-18610315126
- Ms. Huan Xin: 86-15210876984
- Ms. Yaru Wu: 86-18510900198

# International Workshop on High Energy Circular Electron Positron Collider

Monday 06 November 2017 - Wednesday 08 November 2017

IHEP  
Programme

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## Monday 06 November 2017

### CEPC-SppC Overview: Plenary Session I - A214 (08:30-10:30)

- Conveners: Prof. Gao (THU), Yuanning

time	[id]	title	presenter
08:30	[22]	Openning Adress	Prof. WANG, Yifang
08:40	[23]	CEPC-SppC Overview & Objectives	Prof. LOU, Xinchou
09:05	[41]	CEPC Physics CDR - status	WANG, Liantao
09:25	[24]	CEPC accelerator CDR - status	Prof. 高杰, Jie
09:50	[25]	CEPC Detector CDR - status	JOAO GUIMARAES COSTA
10:10	[26]	SppC CDR - status	Prof. TANG, Jingyu

### Conference photo - A214 (10:30-10:40)

### CEPC-SppC Development and R&D: Plenary Session II - A214 (11:00-12:15)

- Conveners: Prof. Bogormykov (BINP), Anton

time	[id]	title	presenter
11:00	[27]	CEPC-SppC infrastructure — status & plan	Mr. LIN, Guoping
11:25	[28]	CEPC R&D highlights — status and plan	Prof. CHI, Yunlong
11:50	[29]	SppC super conducting magnet — status and plan	Dr. XU, Qingjin

### IB Meeting - B410 (12:15-14:00)

- Presenters: Prof. GAO, Yuanning

### International Initiatives: Plenary III - A214 (14:00-16:00)

- Conveners: Prof. BORTOLETTO (Oxford), Daniela

time	[id]	title	presenter
14:00	[20]	Vision talk	Prof. ARKANI-HAMED, Nima
14:45	[30]	The ILC	YAMAMOTO, Akira
15:10	[31]	CERN roadmap and FCC	Dr. MANGANO, Michelangelo
15:35	[33]	American activities on future colliders	YOUNG, Charles

### Poster - Particle Cafe, 2nd floor (16:00-16:30)

- Conveners: Joao Guimaraes Costa

### CEPC I: Parallel Session I - C305 (16:30-18:30)

- Conveners: Prof. Gao, Jie; Dr. Bogomyagkov, Anton

time	[id]	title	presenter
16:30	[48]	CEPC accelerator physics	Prof. YU, ChengHui
16:50	[49]	CEPC parameter optimization and lattice design	Dr. 王, 逗
17:10	[50]	CEPC lattice design and DA optimization	Mr. WANG, Yi Wei

17:30	[51] CEPC beam-beam study and dynamic aperture study	Dr. ZHANG, Yuan
17:50	[52] FCC-ee dynamic aperture with strong radiation	Dr. BOGOMYAGKOV, Anton
18:10	[53] FCC-ee beam energy calibration by J/psi production with the help of small energy e+e- collider	Dr. NIKITIN, Sergei

### Detector & Physics I (detector concepts and system aspects): Parallel Session I - A214 (16:30-18:30)

- Conveners: Joao Guimaraes Costa; Dr. Caccia, Massimo

time [id] title

presenter

16:30	[44] Status of the CEPC magnet R&D	Mr. ZHU, Zian
16:50	[42] Full silicon detector CEPC detector concept	Dr. YAO, Weiming
17:10	[45] A second detector proposal for CEPC	BEDESCHI, Franco BEDESCHI, Franco
17:30	[47] The CLIC-inspired FCCee detector	VIAZLO, Oleksandr
17:50	[43] CMS experience with HGCALE	BELLONI, Alberto
18:10	[46] Advanced DAQ systems for current and future colliders	Prof. LIU, Zhen An

### SppC I: Parallel Session I - A623 (16:30-18:30)

- Conveners: Palmer, Robert; Prof. Lu, Yuanrong

time [id] title

presenter

16:30	[54] SppC general progress	Prof. TANG, Jingyu
16:50	[55] Lattice design progress	CHEN, Yukai
17:10	[56] Progress in collimation studies	YANG, Jianquan
17:20	[57] Beam-beam effects in SPPC and future hadron colliders	Dr. OHMI, Kazuhito
17:40	[58] Beam-beam Studies in Future Circular Hadron Colliders	PIELONI, Tatiana
18:00	[59] Beam-beam weak strong simulations for LHC and HL-LHC	Prof. KARASTATHIS, Nikos

### Theory I: Parallel Session I - A415 (16:30-18:30)

- Conveners: Prof. Nima, Arkani-Hamed; Prof. Shu, Jing

time [id] title

presenter

16:30	[61] EFT at ILC (fits and triple Higgs)	JUNG, Sunghoon JUNG, Sunghoon
16:54	[62] EFT fits	Dr. GU, Jiayin
17:18	[63] Testing multi-Higgs and composite Higgs models	Prof. SU, Shufang
17:42	[64] Higgs-top quark coupling	LIU, Zhen
18:06	[65] Implication of Future Higgs Factory precision on MSSM	Dr. SU, Wei

## Tuesday 07 November 2017

### CEPC II - C305 (08:00-10:00)

- Conveners: Dr. Nikitin, Sergei; Dr. Zhang, Yuan

time	[id]	title	presenter
08:00	[71]	CEPC 100km Booster design	BIAN TIANJIAN
08:15	[72]	CEPC Injection/extraction and timing	Mr. CUI, Xiaohao
08:30	[73]	CEPC collective instabilities	Ms. WANG, Na
08:45	[74]	CEPC MDI	Dr. BAI, Sha
09:05	[75]	CEPC injector Linac beam dynamics	Mr. MENG, Cai
09:20	[76]	Alternative injection possibilities for CEPC	Dr. SEEMAN, John
09:40	[77]	CEPC injector based on plasma based accelerator	Dr. LU, Wei

### Detector & Physics III (Gaseous detectors): Parallel Session II - B326 (08:00-10:00)

- Conveners: Young, Charles; Prell, Soeren; Prof. Gao, Yuanning

time	[id]	title	presenter
08:00	[88]	MPGD overview	Prof. OCHI, Atsuhiko
08:30	[84]	Status and progress report from CEPC TPC tracker detector group	Dr. QI, Huirong
09:00	[86]	An ultra-light drift chamber with particle identification capabilities	Prof. GRANCAGNOLO, Franco
09:30	[87]	Muon detector options for CEPC	Prof. LI, Liang

### Detector& Physics II(Vertex detectors & tracker): Parallel Session II - A214 (08:00-10:00)

- Conveners: Prof. Wang, Meng; Prof. Bortolletto, Daniela

time	[id]	title	presenter
08:00	[78]	Status report from Vertex Detector group	Prof. OUYANG, Qun
08:20	[80]	Pixel sensor technologies for the CEPC	Prof. GRINSTEIN, Sebastian
08:40	[83]	CMOS Pixel Sensors for ILC Related Vertexing & Tracking Device	HU-GUO, Christine Dr. HU-GUO, Christine
09:00	[79]	Alpide and other developments	Prof. SNOEYS, Walter
09:20	[82]	Overview of SOI development	Dr. LU, Yunpeng
09:40	[81]	Tracking in four dimensions	STAIANO, Amedeo

### Theory II: Parallel Session II - A415 (08:00-10:00)

- Conveners: Prof. Heinemeyer, Sven; Prof. Su, Shufang

time	[id]	title	presenter
08:00	[66]	Higgs rare decays	ZHANG, HAO
08:24	[67]	Top partners with Higgs measurement	Prof. HARI, Ramani
08:48	[68]	Electroweak Phase Transition	Prof. LONG, Andrew

09:12	[92] Higgs decay with displaced vertices	Prof. CRAIG, Nathaniel
09:36	[91] Multi-Higgs models beyond Tree Level	CHIANG, Cheng-Wei

### CEPC III: Parallel Session III - C305 (10:30-12:30)

- Conveners: Prof. Chi, Yunlong; Prof. Pagani, Carlo

time	[id] title	presenter
10:30	[94] CEPC SRF system study	Mr. ZHAI, Jiyuan
10:50	[95] Steady State Analysis for the Beam Loading Transient Stability in the Storage Ring RF System	Dr. WANG, Haipeng
11:10	[96] Beam loading and coupled-bunch instabilities from a large ring perspective	Dr. TEYTELMAN, Dmitry
11:30	[97] CEPC RF power source	Dr. ZHOU, Zusheng
11:50	[98] CEPC Cryogenic system	Dr. ZHANG, Jianqin
12:10	[99] CEPC Vacuum chamber system	Mr. DONG, Haiyi

### Detector & Physics IV (Calorimeter): Parallel Session III - A214 (10:30-12:30)

- Conveners: Dr. Liu, Jianbei; Iaktineh, imad; Ferrari, Roberto

time	[id] title	presenter
10:30	[100] CEPC ECAL R&D Status	Dr. ZHANG, Yunlong
10:50	[101] CEPC HCAL R&D Status	Dr. YU, Boxiang
11:10	[102] CALICE SiW status	Prof. BRIENT, Jean-Claude
11:30	[103] CALICE SDHCAL status	Prof. YANG, Haijun Prof. YANG, Haijun YANG, Haijun
11:50	[104] Dual Readout Calorimeter at the CEPC	FERRARI, Roberto
12:10	[105] Alternative calorimeter ideas	Prof. ZHAO, Tianchi

### SppC II: Parallel Session IV - A623 (10:30-12:30)

- Conveners: Prof. Tommasini, Davide; Dr. XU, Qingjin

time	[id] title	presenter
10:30	[123] FCC magnet study	Prof. TOMMASINI, David
10:50	[124] IBS superconductor R&D and plan	Prof. MA, Yanwei
11:10	[122] US Magnet Development Program	Prof. PRESTEMON, Soren
11:30	[126] Advanced superconductor development at WST	Mr. LI, Jianfeng
11:50	[125] HTS magnet R&D at BNL	GUPTA, Ramesh
12:10	[144] Progress of 2G HTS wires development in Shanghai superconductor	Dr. YUE, Zhao

### Theory III: Parallel Session III - A415 (10:30-12:30)

- Conveners: Prof. Cao, Qing-Hong; Prof. Cohen, Andrew

time	[id] title	presenter
10:30	[89] Theoretical considerations of Z-pole fits	Prof. HEINEMEYER, Sven

10:54	[93] Neutrino connection	DREWES, Marco
11:18	[90] Probing new physics, complementarity with Higgs	Prof. REECE, Matthew Reece
11:42	[69] Dark photon	YU, Felix
12:06	[70] Rare Z decays	Dr. LIU, Jia

#### CEPC IV: Parallel Session IV - C305 (14:00-16:00)

- Conveners: Prof. Pei, Guoxi; Prof. Bambade, Philip

time [id] title presenter

14:00	[111] CEPC magnets	Dr. CHEN, Fusan
14:20	[112] CEPC power source and electrostatic separator	Mr. CHEN, Bin
14:40	[113] CEPC final focus SC magnets and anti-solenoid designs	ZHU, Yingshun
15:00	[114] FCC-ee final focus magnetic field study and optimization	SINYATKIN, Sergey
15:20	[115] Radiation shielding	Dr. DING, Yadong
15:40	[116] CEPC mechanics and tunnel design	Ms. WANG, Haijing

#### CEPC-Industrial Consortium (Presentation on CEPC, Procedure and Organization):

#### Parallel Session IV - A214 (14:00-16:00)

#### Detector & Physics V (Simulation): Parallel Session IV - B326 (14:00-16:00)

- Conveners: Dr. Glazov, Sasha; Azzi, Patrizia; Prof. FANG, Yaquan; Mr. Ruan, Manqi

time [id] title presenter

14:00	[137] Fast Simulation for CEPC	Dr. LI, Gang
14:20	[135] Jet energy scale and resolution	Mr. LAI, Peizhu
14:40	[138] Beam Energy monitoring via Compton Scattering	Mr. TANG, Guangyi
15:00	[134] Computing at CEPC	Dr. YAN, TIAN
15:20	[136] Machine Learning at CEPC	Prof. YANG, Fan
15:40	[133] New method to measure Higgs boson mass at e+e- collider	Dr. TIAN, Junping

#### SppC III: Parallel Session III - A623 (14:00-16:00)

- Conveners: Dr. kazuhito, ohmi; Prof. XU, Hongliang

time [id] title presenter

14:00	[129] CEPC-SPPC ep collision parameters	Dr. ZHANG, Yuhong PENG, Yuemei
14:20	[128] Longitudinal beam dynamics for the accelerator chain	Prof. ZHANG, Linhao
14:40	[145] Transverse beam stability and Landau damping in hadron colliders	TAMBASCO, Claudia
15:00	[130] Cryogenic temperature for SPPC	Prof. KRASNOV, Alexander
15:20	[131] Beam screen study	Dr. ZHU, kun
15:40	[132] Injector chain design update	Prof. LU, Yuanrong

**Theory IV: Parallel Session IV - A415 (14:00-16:00)**

- Conveners: ZHANG, HAO; Prof. Reece, Matthew

time	[id]	title	presenter
14:00	[106]	Precision test of QCD	Dr. ZHU, HuaXing
14:24	[107]	NLO for Higgs production	Dr. JIA, Yu
14:48	[108]	Whizard Simulation for $e^+ e^-$	Dr. KILIAN, Wolfgang
15:12	[109]	Quarkonium physics	Prof. QIU, Jianwei
15:36	[110]	Aspects of Flavor physics at CEPC	Dr. QIN, Qin

**CEPC-Industrial Consortium II (Business): Parallel Session V - A214 (16:30-18:15)****Detector & Physics (joint with theory) VI: Parallel Session V - B326 (16:30-18:15)**

- Conveners: Dr. Glazov, Sasha; Azzi, Patrizia; Prof. FANG, Yaquan; Mr. Ruan, Manqi

time	[id]	title	presenter
16:30	[139]	H1-LHC & challenge for CEPC - Higgs	DE FILIPPIS, Nicola
16:50	[140]	HL-LHC & challenge for CEPC - EWK	Prof. AZZURRI, Paolo
17:10	[142]	Study of the CEPC Higgs decaying into two photons	Ms. ZHANG, Zhenyu
17:30	[141]	Combination of CEPC Higgs precision measurement	Mr. ZHANG, Kaili
17:50	[143]	Long lived particles	Prof. BEACHAM, John

**MDI (joint detector and accelerator) I: Parallel Session V - C305 (16:30-18:15)**

- Conveners: Hou, Suen; Sullivan, Michael

time	[id]	title	presenter
16:30	[117]	Introduction (interaction region, magnets, etc. )	Mr. YU, Chenghui
16:55	[118]	Radiation backgrounds at CEPC	Dr. ZHU, Hongbo
17:15	[119]	MDI at SuperKEKB	Mr. LEWIS, Peter
17:35	[120]	Overview of LC FCAL	Prof. BOZOVIC, Ivanka
17:55	[121]	LumiCal at CEPC	HOU, Suen

## Wednesday 08 November 2017

### Discussion : Plenary Session IV - A214 (08:30-10:00)

- Conveners: Prof. Cohen (HKUST/IAS), Andrew

time	[id] title	presenter
08:30	[11] Discussion on CEPC CDR	JOAO GUIMARAES COSTA QIAN, Jianming
09:15	[12] Discussion on organizations and cooperation	Prof. GAO, Yuanning BEDESCHI, Franco

### Summary: Plenary Session V - A214 (10:30-12:30)

- Conveners: Mr. LAKTINEH (IPNL), Imad

time	[id] title	presenter
10:30	[14] Theory summary and plan	
10:50	[15] Detector and Physics summary and plan	
11:15	[16] CEPC accelerator summary and plan	
11:40	[17] SppC summary and plan	
12:00	[13] International Collaboration and joint R&D effort	

### Summary: Plenary Session VI - A214 (14:00-15:00)

- Conveners: Prof. Jin (NJU), Shan

time	[id] title	presenter
14:00	[18] Report from the Industry-Institute consortium	Prof. GAO, Jie
14:20	[19] Report from the institutional meeting	
14:40	[21] Closing remarks	

### Adjourn - A214 (15:00-15:01)