

CEPC 味物理-新物理和相关探测技术研讨会
The CEPC Workshop on Flavor Physics, New
Physics and Detector Technologies

会议手册
Conference manual

中国 上海
2023 年 8 月 13 日至 18 日

主办单位：复旦大学

Fudan University

物理学系 & 现代物理研究所

Department of Physics & Institute of Modern Physics

Local organizing committee

- Yaquan Fang, IHEP CAS
- Yu Gao, IHEP CAS
- Jiayin Gu (chair), Fudan U.
- Lingfeng Li, Brown U.
- Shu Li, TDLI/SJTU
- Zhao Li, IHEP CAS
- Jia Liu, Peking U.
- Meng Xiao, Zhejiang U.
- Xiaoming Zhang, CCNU
- Yuehong Xie, CCNU
- Manqi Ruan, IHEP
- Dingyu Shao (chair), Fudan U.
- Chengping Shen, Fudan U.
- Wei Wang, SJTU
- Xiaolong Wang (chair), Fudan U.
- Haijun Yang, TDLI/SJTU
- Xu'ai Zhuang IHEP CAS
- Xinqiang Li CCNU
- Heting Li (Secretary), Fudan U
- Jingxian Zhang (Secretary), Fudan U

会议日程

会议地点：复旦大学江湾校区物理楼报告厅 C108

2023-8-14		
ZOOM : 93999320631 Password: 230814		
08:15 - 08:30	Open speech	
General		Chair: Chengping Shen
08:30 - 08:45	CEPC Detector & Performance: Status & Highlights	Manqi Ruan
08:45 - 09:10	CEPC flavor physics: Whitepaper status & future plan	Lingfeng Li
09:10 - 09:25	CEPC NP physics: towards White Paper	Xu'ai Zhuang
09:25 - 09:40	CEPC EW physics: towards White Paper	Jiayin Gu
09:40 - 10:05	New results from Muon g-2	Liang Li
Coffee Break and Photos		
Detector: PID based on Cherenkov		Chair: XiaoLong Wang
10:35 - 11:05	Status and plan of the 4th Detector overall performance	Jianchun Wang
11:05 - 11:30	LHCb PID system & TORCH detector	Ulrik Egede
11:30 - 11:55	Belle II PID systems	Shohei Nishida
Lunch		
Flavour		Chair: Jiayin Gu
14:00 - 14:15	ITS3/ITS4 of ALICE	Zhongbao Yin
14:15 - 14:30	B0 to pipi @CEPC	Yuexin Wang
14:30 - 14:55	Bs->Jpsi Phi @CEPC	Mingrui Zhao
14:55 - 15:20	FCNC & Rare decay of Higgs measurements at CEPC	Hao Liang et al.
15:20 - 15:40	Flavor violating Higgs and Z decays	Michele Tamaro
Coffee Break		
New Physics: SUSY		Chair: Lei Wu, Tianjun Li, XuAi Zhuang
16:10 - 16:25	Sleptons and Electroweakino searches at CEPC	Jiarong Yuan
16:25 - 16:40	Probing relatively heavier right-handed selectron in the GmSUGRA	Shabbar Raza
16:40 - 16:55	Prospects for Off-Shell Slepton Searches at CEPC	Pengxuan Zhu
16:55 - 17:10	Implications of muon and electron g-2 anomalies for NMSSM	Fei Wang
17:10 - 17:25	Some exotic Higgs decay from NMSSM at the CEPC	Kun Wang
17:25 - 17:40	Muon g-2: SUSY vs non-SUSY explanations	Peter Athron
2023-8-15		
ZOOM : 96209336768 Password: 230815		
Flavour		Chair: Xin-Qiang Li
08:30 - 08:50	R(D) & R(D*) @ LHCb	Jibo He
08:50 - 09:10	Theoretical review of R(D) and R(D*)	Ryotaro Watanable
09:10 - 09:30	Global fit of b to s l+ l- decays	Fanrong Xu

09:30 - 09:55	LFU/LFV review	Lorenzo Calibbi
09:55 - 10:15	Rare Kaon decays	Avital Dery
Coffee Break		
New Physics: Higgs portal & Exotic Higgs/Z/top decays		Chair: Yaquan Fang, Zhao Li
10:45 - 11:05	Higgs & Z exotic decay	Zhen Liu
11:05 - 11:25	Probing Lepton Flavor Violation at Circular Electron-Positron Colliders	Wolfgang Altmannshofer
11:25 - 11:45	Higgs decays	Kaili Zhang
11:45 - 12:05	Higgs CP via tautau	Xin Chen et al.
12:05 - 12:25	Top mass	Xiaohu Sun
12:25 - 12:45	Quantum Entanglement at Colliders	Hao Zhang
Lunch		
Detector: PID based on TOF		Chair: Mingyi Dong
14:00 - 14:20	MRPC detectors	Yi Wang
14:20 - 14:40	Time of flight detector based on Low-Gain Avalanche Diodes technology	Zhijun Liang
14:40 - 15:00	R&D for STCF PID detector	Qian Liu
15:00 - 15:15	Timing measurement at Cluster level	Yuzhi Che
15:15 - 15:30	R&D for Belle II KLM upgrade with timing measurement	Xiyang Wang
15:30 - 15:50	Beam induced backgrounds at the CEPC	Haoyu Shi
Coffee Break		
New Physics: LLP		Chair: Kechen wang, Liang Li
16:20 - 16:40	Overview of Recent LLP Results	Kechen Wang
16:40 - 17:00	The dipole portal to heavy neutrinos at future colliders	Jing-Yu Zhu
17:00 - 17:20	Theory : new gauge boson	Arindam Das
17:20 - 17:40	Experiment : event signature - ML	Jifeng Hu
17:40 - 18:00	Tau/B/C FCNC to LLP	Xuhui Jiang
2023-8-16		
ZOOM : 97952358812 Password: 230816		
Detector: PID from other systems		Chair: Yong Liu
08:30 - 08:50	Feasibility study of dN/dx at Pixel TPC	Huirong Qi
08:50 - 09:05	The performance of the ALICE TPC	Xiaozhi Bai
09:05 - 09:20	Performance study using Fast Simulation for Drift Chamber	Xu Gao
09:20 - 09:40	R&D of scintillator HCAL for CEPC	Zhiyu Zhao
09:40 - 09:55	The simulation of the GS-HCAL-CEPC	Peng Hu
09:55 - 10:15	The progress of the R&D of the Glass Scintillator	Zhehao Hua
Coffee Break		
New Physics: more exotics		Chair: Yu Gao, Zuowei Liu
10:45 - 11:05	Axion Like Particle Search at Higgs Factories	Kingman Cheung
11:05 - 11:25	Flavour Physics, the Higgs boson, and Emergent Mass	Craig Roberts
11:25 - 11:45	A modified Koide formula from scalar potential models and	Da Liu

	from Yukawaon models	
11:45 - 12:05	Neutrino Nature and Heavy Neutral Leptons	Frank Deppisch
12:05 - 12:25	A modified Koide formula from scalar potential models and from Yukawaon models	Zheng Sun
Lunch		
New Physics: EWPT-GW		Chair: Ke-Pan Xie
14:00 - 14:20	Progress on electroweak phase transition	Ligong Bian
14:20 - 14:40	Collider and Gravitational Wave Complementarity in Probing the Electroweak Phase Transition	Huaike Guo
14:40 - 15:00	Electroweak phase transitions: theory issues and collider tests	Yun JIANG
15:00 - 15:20	Testing EWPT at the lifetime and energy frontiers	Wei Liu
15:20 - 15:40	2HDM under lepton colliders	Wei Su
Coffee Break		
Flavour		Chair: FengKun Guo
16:10 - 16:35	Exotics experimental status	Yanxi Zhang
16:35 - 16:55	Production of doubly heavy hadrons (NRQCD)	HongHao Ma
16:55 - 17:15	Production of heavy hadrons from Z & Higgs decays (NRQCD)	Xuchang Zheng
17:15 - 17:35	Top FCNC	Liaoshan Shi
17:35 - 17:50	Measurement of energy correlators at the CMS	Meng Xiao
2023-8-17		
ZOOM : 95817585010 Password: 230817		
Detector: Software related		Chair: Gang Li
08:30 - 08:55	Developing software in CEPCSW	Weidong Li
08:55 - 09:20	Machine Learning reconstruction and simulation at BESIII	Ye Yuan
09:20 - 09:35	Jet tagging study at CEPC	Libo Liao
09:35 - 09:50	Software method to improve Mass resolution	Yuanzhan Wang
09:50 - 10:10	Large scale PID detector at EIC	Zhihong Ye
10:10 - 10:25	FPMT-timing detector	Lishuang Ma
Coffee Break		
Flavour		Chair: Qin Qin
10:55 - 11:15	Charm physics measurement at LHCb	Liang Sun
11:15 - 11:35	Charm physics measurement at BES III	Baiqian Ke
11:35 - 11:55	DiPion distribution amplitudes and the semileptonic decays of strange charm meson	Shan Chen
11:55 - 12:15	Heavy Neutrino Search at Z factory	Jian-Nan Ding
12:15 - 12:35	Invisible Baryon Decay	Yong Zheng
Lunch		
New Physics: Dark Matter & Dark Sector		Chair: Jia Liu, Xiaoping Wang, Yongchao Zhang
14:00 - 14:20	Complementarity of Lepton Collider Probes of Dark Matter	Kai Ma et al.
14:20 - 14:40	Probing dark matter particles at CEPC	Zuowei Liu
14:40 - 15:00	Lighting Electroweak-Violating ALP-Lepton Interactions at CEPC	Chih-Ting Lu

15:00 - 15:20	A unique γ_5 prescription for Standard Model with application to Top Physics	Long Chen
Coffee Break		
Flavour		Chair: Yanxi Zhang
15:50 - 16:10	Time dependent measurement (LHCb/Belle II)	Peilian LI
16:10 - 16:30	T-odd CP violation	Qin Qin
16:30 - 16:50	Double-mixing CP violation	Yin-Fa Shen
16:50 - 17:10	Partial-wave CP violation	zhenhua zhang
17:20 - 18:05	AI talk	Hengkui Wu
2023-8-18		
ZOOM : 94260540099 Password: 230818		
New Physics: SMEFT & global fits		Chair: Jiayin Gu, Yang Zhang
08:30 - 08:50	SMEFT	Yong Du et al.
08:50 - 09:10	Minimal SUSY global fits with GAMBIT	Peter Athron
09:10 - 09:30	Dipole	Xinkai Wen
09:30 - 09:50	Revisiting Vacuum Stability and CEPC Constraints for the GM Model	Xiaokang Du
09:50 - 10:10	Neutrino Dipole Portal at colliders	Yu Zhang
Coffee Break		
Detector: MDI&readout		Chair: Zhijun Liang
10:30 - 10:50	Machine Background - Collimator @ BEPC Experiments	Bin Wang
10:50 - 11:10	LumiCal for two photon flavor	Suen Hou
11:10 - 11:25	Impact on VTX/Gaseous Chamber	Wei Xu
11:25 - 11:40	Development of a baseline vertex detector prototype for the CEPC	Tianya Wu
11:40 - 11:55	Jet tagging using PN	Yongfeng Zhu
11:55 - 12:10	阵列探测器 FPGA 读出电子学进展	Shoulong Lin
12:10 - 12:25	Study of graph neural network on FPGA	Yutao Zhang
Lunch		
Flavour		Chair: Shohei Nishida
14:00 - 14:25	BSM From Tau decay	Lingfeng Li
14:25 - 14:45	LFU/LFV In tau decays	Alberto Lusiani
14:45 - 15:05	Theoretical review on Physics with Tau	Zhihui Guo
15:05 - 15:25	Belle II at Tau Physics/mass	Yubo Li
15:25 - 15:45	EFTs of Weakly-Interacting Light Particle and Their phenomenology in Flavor Physics	Huayang Song
15:45 - 16:05	Tau physics at BES III	Tao Luo
Coffee Break		
Discussion		Chair: Manqi Ruan
16:35 - 18:05	Discussion	Manqi Ruan

会议服务

一、注册时间及地点 (Registration Time and Location)

8月13日：上海博邻酒店 14:00-20:00

8月14日：会场

二、网络信息 (network information)

Wifi 名称: eduroam

用户名: cepcwwlxwl@guest

密码: CEPCCepc

三、午餐及晚餐安排

8.14 午餐：江湾食堂 1 或 2 楼就餐或茶歇处便餐

8.15-8.18 午餐：江湾食堂三楼就餐

8.15 晚餐：瑞泰和江南宴就餐。(殷行路 1388 弄 1 号 301-2(悠方购物广场星巴克 3 楼))

四、会议酒店

(1) 枫憬酒店（五角场新江湾城店）

上海市杨浦区殷行路 1448 号

(1448 Yinhang Road, Yangpu District, Shanghai)

(2) 上海五角场博邻酒店

上海市杨浦区殷行路 1258 号

(1258 Yinhang Road, Yangpu District, Shanghai)

酒店位置及交通： 两个酒店都在 10 号线新江湾城站附近，距离会场

1.5 公里左右。

上海市杨浦区国霞路 345 号 C 座

345C Guo Xia Road, Yangpu District, Shanghai.

酒店位置及交通：酒店在 10 号线三门路地铁站附近，距离会场 2.8 公里左右。

交通方式：乘坐地铁 10 号线由三门路地铁站至国帆路地铁站，由 2 号门进入到达会场(全程约 30 分钟左右)。

Transport: Take Metro Line 10 from Sanmen Road Metro Station to Guofan Road Metro Station and enter through Gate 2 to reach the venue (the whole journey takes about 30 minutes).



特别提醒，进入校门时需出示您报备的身份证件。

As a special reminder, you will be required to present your reported ID upon entering the school gates.

Suggestions on transportation:

The following is the route reference. Please refer to the "高德地图 (Amap)" APP for specific traffic conditions.

- **虹桥机场或虹桥火车站:** 打车预计 50 分钟左右。也可以乘坐地铁, 时间约为 70 分钟, 乘坐地铁 10 号线由虹桥火车站地铁站出发到新江湾城站, 步行约 6 分钟到达枫憬酒店和博邻酒店。锦江都城酒店须在三门路地铁站下车, 步行约 9 分钟到达锦江都城酒店。到达复旦大学江湾校区的需在 10 号线国帆路地铁站下车。

(Hongqiao Airport or Hongqiao Railway Station: expect about 50 minutes by taxi. You can also take the metro, which takes about 70 minutes. Take metro line 10 from Hongqiao Railway Station metro station to Xin Jiangwan City station, and walk for about 6 minutes to reach MapleGallery Hotel and Bo Neighbourhood Hotel. You must get off at Sanmen Road Metro Station and walk for about 9 minutes to Jin Jiang Capital Hotel. To reach Fudan University Jiangwan Campus, you need to get off at Line 10 Guofan Road Metro Station.)

- **浦东机场:** 打车时间为 1 小时左右。也可以乘坐地铁, 时间约 100 分钟, 乘坐地铁 2 号线由浦东国际机场地铁站出发到达南京东路地铁站换乘 10 号线, 在新江湾城地铁站下车, 步行约 6 分钟到达

枫憬酒店和博邻酒店。锦江都城酒店须在 10 号线的三门路地铁站下车，步行约 9 分钟到达锦江都城酒店。到达复旦大学江湾校区的需在 10 号线国帆路地铁站下车。

(Pudong Airport: taxi time is about 1 hour. You can also take the metro, the time is about 100 minutes, take metro line 2 from Pudong International Airport metro station to Nanjing East Road metro station to transfer to line 10, get off at New Jiangwan City metro station, walk for about 6 minutes to reach MapleGallery Hotel and Bo Neighbourhood Hotel. Get off at Sanmen Road Metro Station on Line 10 and walk for about 9 minutes to Jin Jiang Capital Hotel. To reach Fudan University Jiangwan Campus, get off at Guofan Road Metro Station on Line 10.)

- **上海站：**打车时间约为 30 分钟左右。也可以乘坐地铁，时间约为 40 分钟，乘坐地铁 4 号线由上海火车站地铁站出发到达海伦路地铁站换乘 10 号线，在新江湾城地铁站下车，步行约 6 分钟到达枫憬酒店和博邻酒店。锦江都城酒店须在 10 号线的三门路地铁站下车，步行约 9 分钟到达锦江都城酒店。到达复旦大学江湾校区的需在 10 号线国帆路地铁站下车。

(Shanghai Railway Station: Taxi time is about 30 minutes. You can also take the metro, the time is about 40 minutes, take the metro line 4 from Shanghai Railway Station metro station to Helen Road metro station to transfer to line 10, get off at Xin Jiangwan City metro station, walk for

about 6 minutes to reach Feng Geliang Hotel and Bao Nian Hotel. Get off at Sanmen Road Metro Station on Line 10 and walk for about 9 minutes to Jin Jiang Capital Hotel. To reach Fudan University Jiangwan Campus, get off at Guofan Road Metro Station on Line 10.)

五、周边信息 **Local information**

Nearby places for food and entertainment:

- There is a shopping mall (悠方购物中心) at the Xinjiangwan City Station (新江湾城站) of Line 10 Subway, very close to the hotels.

There are many options for food at the underground level, as well as a fancy grocery store (盒马生鲜).

- There is a famous food and bar area at Da Xue Road (大学路), close to the old campus of Fudan University. One could take line 10 (for less than 10 min) and get off at Jiangwan Stadium Station (江湾体育场站), exit 9. You could also see a very large underground shopping/dining area inside the subway station on your way out.

Recommended food includes Cantonese restaurant (潮界), the documentary film "Life in a Skewer" experience shop(记录片《人生一串》体验店), and Japanese food(秋田食堂).



六、天气预报 weather forecast

2023.8.13 - 8.18

