

International Collaboration



João Guimarães da Costa
(IHEP, Chinese Academy of Sciences)

International Workshop on High Energy Circular Electron Positron Collider

6 November 2017

Last year's International Workshop (2-3 September 2016)

International Participation

About 142 participants, 10% from international institutes



9 people



5 people



1 person

9 talks by foreign colleagues

Theory presentations

New proposals:

- Dual readout calorimeter
- Drift chamber
- MPGD in muon system

International Workshop on High Energy CEPC

International Participation

About **260** participants, **~30%** from international institutes

Scientific Committee

CEPC accelerator

- Philip Bambade (LAL)
- Anton Bogomyagkov (BINP)
- Yunlong CHI (IHEP)
- Jie GAO (IHEP)
- Sergei Nikitin (BINP)
- Carlo Pagani (Milano U. & INFN-LASA)
- Guoxi Pei (IHEP)
- Chenhui YU (IHEP)

SppC accelerator

- Kazuhito Ohmi (KEK)
- Robert Palmer (BNL)
- Jingyu Tang (IHEP)
- Davide Tommasini (CERN)
- Qingjin Xu (IHEP)

Theory

- Qing-Hong Cao (PKU)
- Nathaniel Craig (UCSB)
- Hongjian He (SJTU)
- XiaoGang He (SJTU)
- JianPing Ma (ITP)
- Maxim Perelstein (Cornell U.)
- Tilman Plehn (Heidelberg U.)
- Matthew Reece (Harvard U.)
- German Valencia (Monash U.)
- Liantao Wang (Chicago U.)

Detector

- Patrizia Azzi (INFN Padova)
- Daniela Bortoletto (Oxford)
- Massimo Caccia (INFN)
- Joao Guimaraes da Costa (IHEP)
- Yaquan Fang (IHEP)
- Roberto Ferrari (INFN)
- Yuanning Gao (THU)
- Sasha Glazov (DESY)
- Imad Laktineh (IPNL)
- Jianbei Liu (USTC)
- Wang Meng (SDU)
- Soeren Prell (Iowa State U.)
- Manqi Ruan (IHEP)
- Charlie Young (SLAC)

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Organization of the **Physics and Detector** Working Group

Conveners

Executive: Joao Barreiro Guimaraes Costa (IHEP)
Yuanning Gao (Tsinghua Univ.)
Shan Jin (Nanjing Univ.)

Machine Detector Interface

Hongbo Zhu

Vertex

Ouyang Qun
Sun Xiangming
Wang Meng

Tracker

Qi Huirong
Yulan Li

Calorimeter

ECal

Hu Tao

HCal

Liu Jianbei
Yang Haijun

Muons

Li Liang
Zhu Chengguang

Physics analysis and detector optimization

Ruan Manqi
Li Gang
Li Qiang
Fang Yaquan

How to get involved?

International Participation

○ **Contribute to CDR**

- * Still very much open to contributions from new people
- * **Contacts:**
 - * **Detector CDR: Joao Guimaraes**
 - * Accelerator CDR: Gao Jie
 - * Theory CDR: LianTao

○ **Participate on working meeting**

- * General detector/physics meeting: Wednesday at 3 pm
- * Physics and simulation meetings: Monday at 3 pm

○ **Near future:**

- * Evolve current organization to include international conveners

Internationalization

○ Exchange of students:

- * Chinese students going to international institutions
- * Foreign students coming to China for at least short programs
 - * Bilateral agreements for exchange/research
 - * Successful agreements with France and Italy
- * Scholarship Council fellowships

○ Shared postdoctoral positions

- * Current programs with SLAC and Iowa State University
- * Key point: Fellows should work on topics of interest to the CEPC community in China

○ Short visits to IHEP/China

- * All-silicon detector concept developed by Berkeley visitor

○ New faculty-level positions at IHEP and elsewhere in China:

- * Need to do a better job advertising our willing to hire new people

Internationalization

○ **Chicago–IHEP Student Workshop:**

- * Short number of students from Chicago visited IHEP to work on CEPC related issue for a couple of weeks
- * Successful program earlier this year
- * Could expand, including other institutions
 - * Would need some foreign support postdoc to manage it

○ **Summer HEP Schools**

- * Actively participate in international detector summer schools —> Get young people engaged on the future of HEP

○ **Major conferences participation**

- * Need to increase our visibility at main conferences presenting a consistent project
 - * Production of CDR should help here

Internationalization

○ **Exploit synergies with other future colliders projects**

- * **ILC**: Several people already participating in both. Potential for growth
- * **FCC**: Projects are very similar
 - * Would benefit from common meetings and discussions
- * **HL-LHC**: Many emerging technologies will apply to both detectors
 - * Potential to establish key industrial relationships

○ **Collaboration in R&D projects**

- * Long term collaborations: PFA calorimeter; TPC; Pixel detector
 - * Evolve to get these collaborations more integrated
- * Places fully open to contribute:
 - * Silicon strip tracker
 - * Muon detector
 - * Detector magnet system

○ **Foreign partners funding: seek sources other beyond direct FA support**

Summary

International Participation

- Significant progress done recently to but lots of work required to expand internationalization of the project
- Details on on-going R&D Collaboration projects: Haijun Yang
 - * Lumical
 - * Silicon Vertex
 - * TPC and Drift Chamber tracker
 - * Calorimeters (PFA and DR)
 - * Muon detectors