CIAE Introduction and Plan on NIKA

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2019.04.16

中国原子能科学研究院
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CIAE Intermediate-High Energy Physics Team (CIHEP)

- 2 Professors: Xiaomei Li(Team Leader)
  Shuhua Zhou
- 3 Associate Professors: Shouyang Hu
  Jing Zhou
  Yuliang Yan
- 1 research assistant Mingrui ZHAO
- 5 Graduated Students

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Some members of CIHEP Team

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Team Leader

Xiaomei Li, Professor of Physics

1998-2002, Ph.D at SUBATECH, Ecole des Mines de Nantes, Fra

2003-2005, Post-doc at GSI, Germany (30% working at CERN/ALICE)

2006-2011, Associate Professor at China Institute of Atomic Energy

2011-now, Professor at China Institute of Atomic Energy

2005-2018, ~4 weeks each year, Visiting Scientist at CERN, Swiss

~4 weeks each year, Visiting Scientist at BNL and JLab, USA

IB member of PHENIX at BNL, ALICE at CERN and CEPC in China

Research Direction: Heavy-ion collisions, Particle physics,

Team Leader

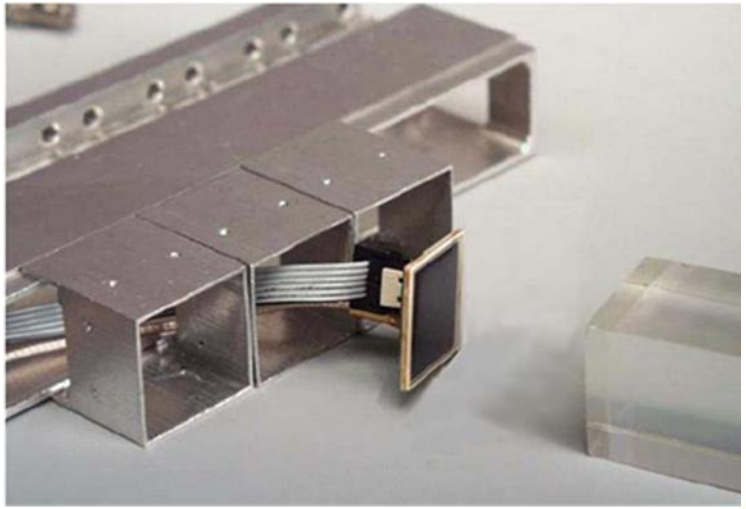
Xiaomei Li, Professor of Physics

- more than 100 papers published
- more than 30 conference invited talks
- co-chaired 5 international conferences: “SNP2006”, “PHENIX Pre-QM2006 Meeting”, “Analytic, Simulated and Experimental Studies for RHIC Physics Based on pQCD”(2008), “Hadron-China2012” and “ALICE Week”(2013).
- As principle investigator, recent awards:
  2010 First Prize of CIAE Science and Technology Achievement Award, PI
  2011 First Prize of CIAE Science and Technology Achievement Award, PI
  2011Third Prize of CNNC Science and Technology Award, PI
  2012 Third Prize of Beijing Science and Technology Award, PI
  2012 Second Prize of CIAE Science and Technology Achievement Award, PI
  2013 Second Prize of CIAE Technology Improvement Award, PI
  2015 Second Prize of CIAE Science and Technology Achievement Award, PI

Recent Researches

❖ALICE Experiment at CERN:

1. R&D of PHOS and MicroMegas detectors, R&D of PIN-Diode
2. Outstanding contributions to ALICE set-up:
   6 CIAE technicians *5 years working in CERN, the manpower contribution counts 826kCHF from CIAE
3. Participating in the simulation of PHOS and TRD detectors, and the calculation of photon production in ALICE.



Recent Researches

❖PHENIX Experiment at BNL:

1. Development and production of RPC module parts for Muon Upgrade.
   Carried out the design and production of the module parts of RPC detectors for PHENIX forward upgrade, which was awarded the Beijing Science and Technology Prize.
2. Participating in the data analysis of neutral pion single spin asymmetry

❖sPHENIX Experiment at BNL:

1. Participating in the EMcal block R&D, test and assembly.

Recent Researches

❖PandaXIII Experiment in China

1. Participating in the TPC assembly.
2. In charge of Microbulk MicroMegas test and QA.

❖CEPC Experiment in China

1. R&D of TPC and simulations

❖SoLID collaboration at JLab:

1. Co-spokesperson on "Target Single Spin Asymmetry on a Transversely Polarized Proton Target"
2. R&D of Large GEM Foil and improving the performance of APV25 electronics: 30cm*30cm GEM foil was manufactured successfully at CIAE.

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Recent work on MPGD detector at CIAE

- The lab construction has finished.
  - Clean room;
  - Copper etching room;
  - Kapton etching room;
  - Test Room

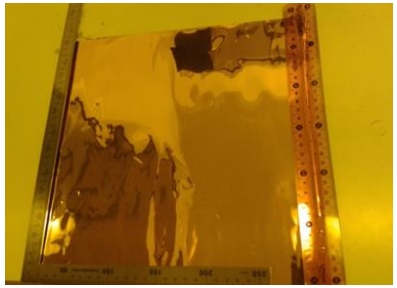
Hot Roll Lamination machine

Exposure machine

copper etching room

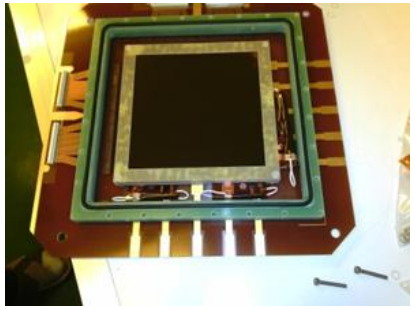
kapton etching room

- R&D of GEM foils with double mask technology

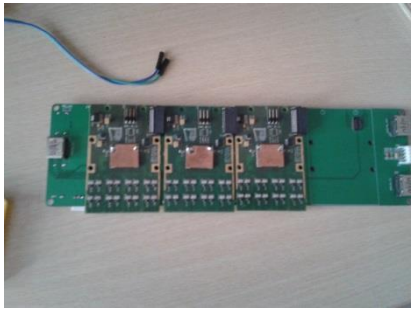


- R&D of bulk MicroMegas

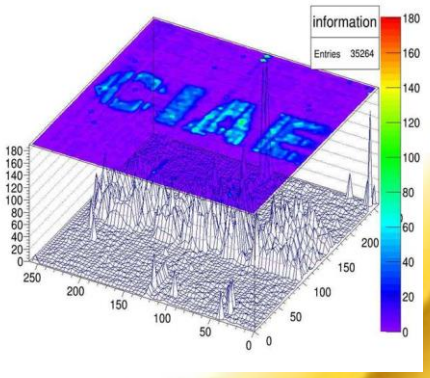
GEM Detector X-ray Imaging with APV25 Electronics



New backplane made at CIAE



- 10cm*10cm GEM built at CIAE
- GEM Position resolution 76um
- X ray Energy: 8.9KeV;
- 256 channels for each dimension(512 channel in total);
- 4 APV FECs were used (2 for each dimension)



MoU and Silicon Detector Lab

- CIAE and JINR signed the MoU for the future collaboration on May 30, 2018.
- CIAE and ALICE signed the Implementing Agreement on the detector upgrade and physics research of the ALICE experiment on Dec. 7, 2018.
- CIAE is building silicon detector lab which collaborated with ALICE now. 200m^2 clean room is in prepare.

Plan of CIAE on NIKA

- Participating in NIKA/MPD-ITS R&D, production, test and assembly.
- Maybe some work on TPC since we had MPGD lab already.
- The detector lab at CIAE are going to increase the number of staff to 10, students to 10, technicians to 7, and visiting scientists to 5.

Advantages of CIAE

- CIAE has its own experimental workshop with more than 200 technicians.
- CIAE is located in the suburbs of Beijing. It is easier to find a place to build a laboratory.

- Thanks for your attention!

- Thanks a lot to Prof. Fuqiang Wang for helping to introduce our work!