CURRICULUM VITAE

Beijiang Liu

Institute of High Energy Physics,
19B YuquanLu, Shijingshan District
Beijing, 100049

Phone: +86-10-88236050 (office)
Fax: +86-10-88233083
Email: liubj@ihep.ac.cn

Career History

Associate Professor, Experimental Particle Physics, Institute of High Energy Physics, Chinese Academy of Sciences, 2011 – present

Joint Postdoctoral Fellows, University of Hongkong and Chinese University of Hongkong, 2008 – 2011

Ph.D., Experimental Particle Physics, Institute of High Energy Physics, Chinese Academy of Sciences, 2008

B.S., Applied Physics, Tongji University, 2003

Honors and Awards

Fellowship of the Youth Innovation Promotion Association, Chinese Academy of Sciences 2012-2014

Scholarship of the director of Chinese Academy of Sciences, 2008

Excellent student of Graduate University of Chinese Academy of Sciences, 2007, 2008

Scholarship of the director of Institute of High Energy Physics, 2007

Research Experience

My principal research interest is in experimental particle physics. Since 2004, I have worked on BES experiment. I am a member of the Youth Innovation Promotion Association, CAS.

I am primarily interested in hadron spectroscopy and have been a key person in the BESIII PWA project. I joined in the establishment of GPU accelerated PWA software framework GPUPWA and now is in charge of the software development as well as the construction of the GPU based high performance computing cluster at IHEP. I established the track-based alignment of BESIII drift chamber. I made a foundational contribution to the data quality monitoring systems for BESIII experiment and Dayabay neutrino experiment. My efforts also included the development of event generators and BESIII tracking and vertex fitting software.

Current Research Projects and Future Plans

Partial wave analysis (PWA) is a key tool to study the hadron spectroscopy. PWA makes full use of the information in data and directly fits the matrix elements, that allows one to extract the resonance parameters, spin-parities and decay properties with high sensitivity and accuracy. I initialized and organized the series partial wave analyses of J/ψ radiative decays into peudoscalars at BES III, which are of great interests in glueball hunting. A high sensitivity PWA system for high statistics analyses is a very challenging project. I'm now in charge of the maintenance and further development of GPUPWA as well as the construction of the GPU based high performance computing cluster at IHEP. I have been highly dedicating to the research and development of PWA methodology and technique. I originated the binned maximum likelihood PWA at BES III. My research efforts in PWA are also including new methods of background treatments, convolution of detector response and novel fitting algorithms.

I'm also beginning a new effort on research and development of tracking and vertex software for future experiments (e.g. a proposed Higgs factory, Circular Electron Positron Collider, CEPC).

Selected publications

1) G. Xu, et al., Partial wave analysis of $J/\psi \to \gamma\eta\eta$, Phys. Rev. D87:092009, 2013

2) Y. Chen, et al., Study of $J/\psi \to \omega p\bar{p}$, Phys. Rev. D87:112004, 2013

3) Z.Wu, et al., First observation of $\eta(1405)$ decays into $f_0(980)\pi^0$, Phys. Rev. Lett. 108:182001, 2012

4) X.Sun et al., Online data quality monitoring system at BESIII, CPC 36:622, 2012

5) B.J Liu, et al., Branching fraction measurements of χ_{c0} and χ_{c2} to $\pi^0\pi^0$ and $\eta\eta$, Phys. Rev. D81:052005, 2010

6) B.J Liu et al., Study of a0(980)- f0(980) mixing, Phys. Rev. D83:032003, 2011

7) N. Berger, B.J. Liu and J.K. Wang, Partial wave analysis using graphics processing units, J. Phys. Conf. Ser. 219:042031, 2010

8) Y.H. Qi, Y.P. Kuang, B.J. Liu and B. Zhang, Anomalous gauge couplings of the Higgs boson at the CERN LHC: Semileptonic mode in WW scatterings, Phys. Rev. D79:055010, 2009

9) B.J. Liu, et al., Study of J/ψ decaying into pbar p, Eur. Phys. J. C53:15, 2008

10) B.J Liu, et al., Partial wave analysis of $J/\psi \rightarrow \gamma\phi\phi$, Phys. Lett. B662:330, 2008

Full publication list:

http://inspirehep.net/search?p=find+a+b.j.+liu

Ms. Wang Lu (Lu.Wang@ihep.ac.cn) is an associate professor of computing center, IHEP. Her interests of research include distributed file system, cloud computing, machine learning and their applications in physics computing.

1) Management of a PB-scale Lustre file system which serves as the main disk storage of IHEP. My work involves system architecting, problem diagnosis and performance tuning, development of an integrated configuration and monitoring toolkit, and problem-oriented research of Lustre source code.

2) Development of a cluster-job analysis system. The system which trains a job classifier by some machine learning algorithms with historical data, classifies each job according to its IO features collected by a SystemTap module and some static PBS information, is targeted to provide an distribution of job type and efficiency, a detection of abnormal jobs and computing nodes etc.

3) Integration of cloud storage with physics analysis framework. My work includes development of a CERN ROOT plugin which supports a variety of mainstream cloud storage protocols and performance evaluation of HUAWEI EOS storage and Open Stack Swift with real physics analysis job.

4) Research and evaluation of novel storage architectures and technologies. To cater the future requirement of IO performance, data reliability and COQ, I have been evaluating several trending storages including Glusterfs, Loongstore and YeeStor with both standard benchmark tools (mdtest, iozone etc.) and physics computing jobs.

5) Research of metadata performance on Mass storage system. Compared several main-steam designs of metadata server, redesigned an in-memory metadata server for CASTOR 1.7, improved metadata searching by Bloom filter algorithm. Significant performance improvement has been found on a prototype system.

CURRICULUM VITAE

Yaodong Cheng

Personal Details

Name: Yaodong Cheng
Gender: Male
Affiliation: the Institute of High Energy Physics, Chinese Academy of Sciences
Email: chyd@ihep.ac.cn
Tel: +86-10-88236008
Date of birth: 31-07-1977

Current Position

2009/7-Present   Associate Professor,
                  The Institute of High Energy Physics, Chinese Academy of Sciences

Education

2003-2006: Ph.D., Institute of High Energy Physics, Chinese Academy of Sciences
2000-2003: Master, Computer College of Jilin University
1996-2000: Bachelor, Xinyang Normal University

Work experience

2008-2009   Assistant Professor,
             The Institute of High Energy Physics, Chinese Academy of Sciences
2006-2008   Post doctor,
             The Institute of High Energy Physics, Chinese Academy of Sciences

Research experience

Dr. Yaodong Cheng is an associate professor of computing center, IHEP. Her interests of research include distributed file system, cloud computing, and volunteer computing and so on.

1) Development of WLCG data management middleware. During the half a year visit at CERN in 2006, I joined the LCG IT-GD group and developed the lcg_util and gfal components.
2) Management of IBM 3584 tape libraries. Modified the source code of CERN CASTOR 1.7.1.5 in 2006, and solved several problems at IHEP, including LTO4 tape device support, fast data migration between tape and lustre, a parallel file system for data process
3) Distributed file system research and application. Research on distributed file system, including architecture, metadata, IO performance, replication, striping and so on. I have rich experiences on Lustre, gluster, mfs and so on. Especially, I am very

familiar with Gluster file system architecture, and added some valuable functions, including unified file distribution, multiple layout versions and so on.

4) Research on SSD cache and small file storage. In some real-time web applications, there are large numbers of small files, for example the size is less than 30kB, and the response time is very critical. In a Taobao CDN project, I proposed a solution to cache file system inode in SSD cache to reduce the response time dramatically.

5) Volunteer Computing project based on BOINC. IHEP launched CAS@HOME project in 2010, which was the first volunteer computing project in China. We are developing a flexible scheduler for BOINC to support fine-grained task distribution, for example one task is only sent to a specified host based on a white list policy.

CURRICULUM VITAE
Associate Professor Yi Zhang, Ph.D

Personal Details

Name: Yi Zhang

Gender: Male

Mailing Address: P.O.Box 918-3, 19B Yuquan Lu,

Shijingshan District, Beijing,

China, 100049

Email: zhangyi@mail.ihep.ac.cn

Tel: +86-010-88236693

Date and Place of Birth: 17th Oct. 1980, P.R. China

Current Position

2011/1-Present: Associate Professor,

Key Laboratory of Particle Astrophysics,

Institute of High Energy Physics,

Chinese Academy of Sciences

Education And qualifications

2003-2008 Ph.D. , Institute of High Energy Physics, Chinese Academy of Sciences

1999-2003 B.Sc., Tsinghua University

Work Experience

2011/1-Present: Associate Professor, Institute of High Energy Physics,

Chinese Academy of Sciences

2008-2011: Assistant Professor, Institute of High Energy Physics,

Chinese Academy of Sciences

Research experience

1. Obtained the two-dimensional high-precision anisotropy map for energies from a few to several hundred TeV by improving the all-sky survey method. The "tail-in" and "loss cone" anisotropy were revealed in finer details, and a new excess around the direction of Cygnus region was uncovered. For cosmic-ray energies up to a few hundred TeV, all components of anisotropies fade away, showing a corotation of Galactic cosmic rays with the local Galactic magnetic environment.

2. Developed an all-sky survey method for steady TeV gamma-ray point sources, which was based on the equal zenithal angle method. By this method, two sources Crab and Mrk421 were observed with high significance analyzing the data of the Tibet air shower array.

3. Analyzed the periodicities of cosmic ray intensity variation by using Lomb-Scargle Fourier transformation method with about 37 billion cosmic ray events recorded by Tibet III Air Shower Array from 1999 to 2005. Besides the solar diurnal, sidereal diurnal and sidereal semi-diurnal modulations at a level of 0.1%, no other periodicity was found with large enough significance in a range from 1 hour to 1 month.

4. Analyzed Tibet AS ɤ data and found that the anisotropy of multi-TeV Galactic CRs remained insensitive to solar activities. The data set was divided into nine intervals, each with a time span of about one year. The data set was divided into nine intervals, with each corresponded to a time span. The sidereal anisotropy appeared fairly stable from year to year over the entire observation period of nine years.

5. Constructed a phenomenological model connecting the observed anisotropy of the galactic cosmic rays and the galactic halo magnetic field. The model extended the anisotropy observed locally to the whole Galaxy, which meant the GCR streaming might exist at the global scale. The induced magnetic field by the GCR

streaming loop was calculated. A qualitative consistency on structure of the halo magnetic field was obtained between the observation and the calculation.

6. Improved the angular resolution for ARGO-YBJ experiment by developing a new reconstruction method. An improvement of 40% was obtained for the low energy events and 20% for the high energy events, which was validated by the analysis of moon shadow in ARGO-YBJ experiment.

Research Interests

Cosmic ray Physics and VHE gamma ray astronomy

Awards and Honors

National Outstanding Doctoral Dissertation Award, 2010.   Awarded by Ministry of Education of China and Academic Degree Commission of the State Council.

Publications:

Refereed papers

1. Xiao-bo Qu, Yi Zhang et al., Anisotropy as a Probe of the Galactic Cosmic-Ray Propagation and Halo Magnetic Field, APJL, 750 L17,2012

2. Amenomori, et al., On Temporal Variations of the Multi-TeV Cosmic Ray Anisotropy using the Tibet III Air Shower Array, ApJ 711 119, 2010

3. Feng Zhao-Yang, Yi Zhang et al., Study on the separation of 100 TeV gamma-rays from cosmic rays for the Tibet AS γ experiment，CHINESE PHYSICS C, 35(2), pp 153-157, 2011

4. Amenomori, Y et al., Anisotropy and Corotation of Galactic Cosmic Rays, Science, 314, 439-443, 2006

5. Amenomori, et al., A Northern Sky Survey for Steady TeV Gamma-Ray Point Sources Using the Tibet Air Shower Array, ApJ 633,1005-1012, 2005

Resume of Zhijia SUN

Email: sunzj@ihep.ac.cn

Personal Data:

Date of Birth: 06, 09, 1977   Sex: Male

Place of Birth: Jilin, China   Nationality: Chinese

Marital status: Single   Health: Excellent

Education:

9/1984—9/1990   Shiyan Primary School, Tonghua City, Jilin Province

9/1990—7/1993   No. 13 Senior High School, Tonghua City, Jilin Province

9/1993—7/1996   No. 1 Senior High School, Tonghua City, Jilin Province

9/1996—7/2000   B.S. in Department of Modern Physics, University of Science and Technology of China (USTC)

9/2000—7/2005   PhD student in Institute of High Energy Physics (IHEP), Chinese Academy of Science (CAS)

9/2005—7/2007   Post-doctorate in Institute of High Energy Physics (IHEP), Chinese Academy of Science (CAS)

Key major subjects:

Theoretical Mechanics; Thermodynamics & Statistical Physics; Quantum Mechanics; Atomic Physics; Electrodynamics; Solid State Physics; Nuclear Physics; C++ language; Computational Physics; Modern Physics Experiments; Advanced Nuclear Physics Experiments; Advanced Quantum Mechanics; Collide Physics of High Energy; Theory of Quantum Field; Group Theory.

Working Experience:

7/1998 — 7/1999   Taking part in designing the lacuna detecting system by ultrasound in Digital Signal Processing(DSP) group of USTC, which was working well in Angang Steel Company Ltd.

7/1999 — 7/2000   Working on Research and development of the DAQ system on PCI-bus, which achieved the fastest data transmitting speed as 15 MB/s.

7/2000 — 7/2001   Studying foundational and senior subjects of the Particle Physics in Graduate University of Chinese Academy of Sciences(GSCAS)

7/2001 — 7/2002   Studying the performance of the Electro-Magnetic Calorimeter(EMC) system constructed with the plumbum-scintillate fiber and read out with

APD, which was one EMC option of Beijing τ-charm factory(BTCF).

7/2002 — 7/2003	Monte Carlo simulation and 1:1 model test by cosmic and e-Pion beam of the Cerenkov Correlated Timing Detector(CCT), which was one candidate of TOF system of Beijing Spectrometer III(BESIII). Studying the performance of the Multi-dynode PMT used in fiber reading out.
7/2003 — 7/2005	Monte Carlo simulation and 1:1 model test by cosmic and e-Pion beam of double-layer scintillator, the actual TOF system of BESIII. Study the performance of scintillators of BC408 and BC404, and the performance of the PMT of R5924.
7/2005 — 4/2007	Involving in the TOF system building of BESIII in IHEP, with responsibility for measuring the prime features of the PMTs and scintillators, testing the performance of the cable for HV and signal, taking part in the monitor system design and building.
4/2007 — 6/2007	Involving in the monitor system design and building in University of Hawaii at Manoa, in charge of measuring the parameters of Laser Diode and fibers, and taking part in the electronics module design.
3/2009 — 5/2009	Visiting detector group of KEK and J-Parc in Japan. Involving in neutron detector build and test by neutron beam.
9/2010 —10/2010	Visiting detector group of INFN in Italy and attended the RD51 meeting.
9/2007— now	Working on detector development as an associate professor of Institute of High Energy Physics (IHEP), Chinese Academy of Sciences. In charge of detector R&D for CSNS project.

Publication papers

1. Zhijia Sun et al., Beam Test For a 1:1 Module of Time of Flight Counter of BESIII, HEP & NP, 2005, 29(10): 933-936

2. Chong Wu … Zhijia Sun et al., The timing properties of a plastic time-of-flight scintillator from a beam test, Nucl. Inst. & Meth. A 555 (2005) 142-147

3. Li Zhao … Zhijia Sun et al., Properties of plastic scintillators after irradiation, Nucl. Inst. & Meth. A 552 (2005) 449

4. Chong Wu, Zhijia Sun et al., A measurement of Transit Time Spread of Photomultiplier Tube with Cherenkov Light, HEP & NP, 2005, 29(9): 896-899

Zhimin WANG (王志民)

Birth: 1981.9
wangzhm@ihep.ac.cn
phone: +86-10-88235437
cell: +86-13520522165
Particle Astrophysics centre,
Institute of High energy physics,
Hall #4, 19B YuquanLu, Shijingshan District, Beijing, China
Post code: 100049

RESEARCH FIELD

Major in experiment of particle physics, working at DayaBay reactor neutrino experiment in detector construction, system commissioning, detector calibration, event reconstruction, detector performance study, detector running and data analysis; working at Jiangmen neutrino experiment (JUNO); and few other topics on detection and study of cosmic ray, dark matter detection.

EDUCATION

2000.9 – 2004.7, Beijing Institute of Technology, Beijing, Applied physics, Bachelor
2004.9 – 2009.7, Graduate School of Chinese Academy of Science, Beijing, Particle physics and Atomic physics, Doctor

EMPLOYMENT

2009.7 – 2012.6, Institute of high energy physics, Assistant researcher
2012.7 – now, Institute of high energy physics, Associate researcher

PERSONAL INTERESTS
1. Detector technology: Liquid scintilator, Liquid Ar/Xe, gas detector, semi-conduct detector etc.
2. Neutrino/dark matter experiments
3. Detector simulation: Geant4, gas detector simulation
4. Software of particle physics experiments: software structure and management,
5. Computing facility/service