Ye, Jingbo

EDUCATION:

1986 B.Sc., University of Science and Technology of China (USTC).

1992 Ph.D., USTC in conjunction with Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, and the Institute of High Energy Physics (IHEP) Beijing.

EMPLOYMENT:

Since 2012 Professor in Physics and EE, SMU, Dallas, Texas. SMU Ford Senior Research Fellow.
2009-2012 Associate Professor in Physics and EE, SMU, Dallas, Texas.
2004-2009 Assistant Professor in Physics and Electrical Engineering, SMU, Dallas, Texas.
1998-2004 Senior Research Associate in Physics, SMU, Dallas, Texas.
1995-1998 Postdoctoral Research Associate in Physics, SMU, Dallas, Texas.
1993-1995 Scientific Associate, CERN, Geneva, Switzerland.
1992-1993 Lecturer, USTC, China.

PROFESSIONAL EXPERIENCE:

I am an experimental particle physicist. From 1989 to 1995 I worked in L3 at LEP on detector simulation, physics data analysis, software development and maintenance. From 1995 to 1998 I worked in CLEO at CESR on detector development for the CLEO III upgrade. Since 1998, I have been a member of ATLAS at LHC. I coordinated the design and construction of the optical link system for the Liquid Argon Calorimeter (LAr) front-end readout. I now lead R&D and Construction programs at SMU for upgrades in ATLAS and for next generation detector data transmission in HEP experiments.

Hardware projects and Research Infrastructure establishments at SMU:

- I lead the R&D on the LOC ASIC family that reaches 10 Gbps per fiber for detector front-end data transmission, state-of-the-art in HEP experiments.
- I lead the R&D that delivers the smallest TOSA based optical transmitter. Together with the LOC serializer ASIC, we achieve the highest data transmission with the lowest power dissipation and smallest footprint in HEP experiments up till now.
- I lead the R&D on array optical transmitter that aims at 120 Gbps from each MOI based module.
- I work with CERN in the lpGBT and Versatile Link+ projects.
- From 2000 to 2007, I coordinated an international team that designed, constructed, installed and commissioned the radiation tolerant optical links for the ATLAS LAr readout system. I am responsible for this link system's maintenance and operation.
- In 1998 I established the Optoelectronics laboratory in the Department of Physics at SMU. The ATLAS LAr optical link project and other projects have been carried out in this lab. Federal research funds, together with funds from the ATLAS projects, the Lightner-Sams Foundation and from Dallas local industry, brought up the lab as a state-of-the-art facility for optoelectronics systems. In 2006, I added to this lab the capability to design and develop ASIC chips. I assume full responsibility for this lab since 2004. Projects in this lab now support three research staffs and a few graduate and undergraduate students.

Physics Data Analyses and Other Research Activities at SMU:

- I advise one postdoc in the following studies in ATLAS: searches for the Higgs particles in its Zγ decay channel.
- I co-supervised one Ph.D. student in the search for the Dirac magnetic monopole with the ATLAS detector. I supervise another Ph.D. student in DiBoson physics studies (Zγ and Zγγ channels) with the ATLAS data. I also supervised Master students in the following studies: *"A Time to Digital Converter Implemented in FPGA"*; *"The Production Cross Section Calculation of the*

Dirac Magnetic Monopole Production through the Two Photon Process"; *"The Experimental Studies and GEANT4 Based Monte Carlo Modeling on Radiation Effects of Silicon-on-Sapphire Semiconductor Devices"*.

- From 2008 to 2010, I was the PI for the Advanced Detector Research (ADR) program supported by the DOE on the "Evaluation of the 0.25 μm Silicon-on-Sapphire technology for ASIC developments for future particle physics detector front-end readout systems".

SELECTED PUBLICATIONS:

- J. Ye on behalf of the ATLAS Liquid Argon Calorimeter Group, "A Serializer ASIC at 5 Gbps for Detector Front-end Electronics Readout", presented at the XIV International Conference on Calorimetry in High Energy Physics, May 10-14, 2010, Beijing, China.
- With T.Liu, D. Gong, A. Xiang, C. Liu and M. King, *et al*., presented at the Topical Workshop on Electronics for Particle Physics, Sep. 20-24, 2010, Aachen, Germany, and submitted to JINST for publications: "A 4.9-GHz Low Power, Low Jitter, LC Phase Locked Loop", "A 16:1 Serializer ASIC for Data Transmission at 5 Gbps", "Link Model Simulation and Power Penalty Specification of Versatile Link Systems", "Design and Verification of a Bit Error Rate Tester in Altera FPGA for Optical Link Developments", "R&D Towards Cryogenic Optical Links", "Response of a Commercial 0.25 μm Thin-Film Silicon-on-Sapphire CMOS Technology to Total Ionizing Dose".
- With B. Arvidsson *et al*., "The radiation tolerance of specific optical fibres exposed to 650 kGy(Si) of ionizing adiation", JINST 4 P07010 (2009).
- With A.Firan *et al.*, "Search for Magnetic Monopoles using the ATLAS Detector" ATL-COM-PHYS-2008-208
- With N.J.Buchanan *et al.*, "Design and Implementation of the Front End Board for the readout of the ATLAS liquid argon calorimeters", JINST 3, P03004 (2008) and with A. Bazan *et al*., "Atlas Liquid Argon Calorimeter Back End Electronics", JINST 2, P06002 (2007)
- D.Goldin and J.Ye, "Survey of Higgs Production in Association with W and Z bosons", ATL-COM-PHYS-2007-064
- J.Ye *et al.*, "Radiation Resistance of Single Frequency 1310-nm AlGaInAs-InP Grating-Outcoupled Surface-Emitting Lasers", Photonics Technology Letters,Vol.18,No 1, Jan. 2006, pp148-150.
- T.Coan, T.Liu and J.Ye, "A compact apparatus for muon lifetime measurement and time dilation demonstration in the undergraduate laboratory", Am. J. Phys. 74 (2), Feb. 2006, p.161 – 164.
- With M.-L. Andrieux *et al*., "Single-event upset studies of a high-speed digital optical data link", Nucl. Instrum. Meth. A 456 (2001) 342-351.
- With R.J.Mountain *et al.*, "The CLEO III ring imaging Cherenkov detector", Nucl. Instrum.Meth. A 433 (1999) 77
- With M. Acciarri *et al.*,"Tests of QED at LEP Energies using $e^+e^- \rightarrow \gamma\gamma(\gamma)$ and $e^+e^- \rightarrow l^+l^-\gamma\gamma$", Phys.Lett. B 353 (1995) 136.
- J. Ye, "Meas. of Photon Polarization from 3γ Annihilation of Orthopositronium", Phys.Lett. A 133 (1988)309.

Synergistic activities: I am a member of ATLAS. I was the L2 manager for the US-ATLAS LAr upgrade R&D program from 2010 to 2014. I was the ATLAS coordinator in the Joint ATLAS-CMS Optoelectronics Working Group.
Collaborators: close collaborations with BNL, Columbia University, CERN, FNAL, and Oxford.
Graduate advisors: X.W.Tang (USTC), J.Ulbricht (ETH) and H.S.Chen (IHEP)
Graduate students advised at SMU: Y.He, T.Dougall, J.Norton, A.Firan, Z.Liang, Y.Li, L.Zhuo and Xiandong Zhao.
Postdocs supervised at SMU: D.Goldin, A.Firan and H.Wang.