

# Kam-Biu Luk

## CONTACT INFORMATION

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## EDUCATION

1983 Ph.D. Rutgers University, New Jersey, U.S.A.

1976 B.S. University of Hong Kong, Hong Kong

## PROFESSIONAL HISTORY

2021-present IAS Paul C.W. Chu Professor, Hong Kong University of Science and Technology

2021-present Professor Emeritus, Department of Physics, University of California at Berkeley

1995-2021 Professor, Department of Physics, University of California at Berkeley

1993-2021 Faculty Senior Scientist, Physics Division, Lawrence Berkeley National Laboratory

2006-2007 Vice Chair of Instruction, Physics Department, University of California at Berkeley

2002-2003 Assistant Dean, Undergraduate office, College of Letters and Science, UC Berkeley

1991-1995 Associate Professor, University of California at Berkeley

1989-1991 Assistant Professor, University of California at Berkeley

1989-1993 Faculty Scientist, Physics Division, Lawrence Berkeley National Laboratory

1986-1989 Associate Scientist, Fermilab

1983-1986 Postdoctoral Research Associate, University of Washington at Seattle

## HONORS AND AWARDS

2019 Co-recipient, Future Science Prize in Physical Science, Future Forum

2019-present Member, American Academy of Arts and Sciences

2019 Distinguished Alumni Award, Faculty of Science, University of Hong Kong

2016 Doctor of Science *honoris causa*, Hong Kong University of Science and Technology

2016 Rutgers 250 fellow, Rutgers University

2016 Co-recipient as leader of the Daya Bay Reactor Neutrino Experiment, Breakthrough Prize in Fundamental Physics

2015-2021 Senior Visiting Fellow, Jockey Club Institute for Advanced Study, Hong Kong University of Science and Technology

2014 Co-recipient, W.K.H. Panofsky Prize of American Physical Society

2013 Recipient, LBNL Director's Award for Exceptional Achievement in Scientific Area

2011-2021 Hung Hing Ying Distinguished Visiting Professor in Science, University of Hong Kong

2007-2010 Honorary Professor, Department of Physics, University of Hong Kong

2007-2010 Cheung Kong Scholar, Ministry of Education, China

2001 Fall Miller Professor, University of California, Berkeley

1997-present Fellow, American Physical Society

1990-1994 Alfred P. Sloan Research Fellow

1989-1991 Outstanding Junior Investigator, U.S. Department of Energy

1986-1989 R.R. Wilson Fellow, Fermilab

## PROFESSIONAL AFFILIATIONS

American Academy of Arts and Sciences  
American Physical Society  
American Association for the Advancement of Science  
International Organization of Chinese Physicist and Astronomers (OCPA)

## RESEARCH ACTIVITIES

Experimental Particle Physics with current focus on neutrino physics and instrumentation.

Co-spokesperson:

Daya Bay Reactor Neutrino Experiment - Determination of the neutrino mixing angle  $\theta_{13}$   
Fermilab E871 (HyperCP) - Search for direct CP violation in hyperon decays

Spokesperson:

Fermilab E756 - Determination of the magnetic moment of the  $\Omega^-$  hyperon

Co-coordinator:

DUNE Near Detector Concept Study - Identify detector technologies and configurations

## REPRESENTATIVE PUBLICATIONS

1. 'LArPix: Demonstration of low-power 3D pixelated charge readout for liquid argon time projection chambers',  
D. A. Dwyer *et al.*, JINST **13**, no. 10, P10007 (2018).
2. 'Measurement of the Electron Antineutrino Oscillation with 1958 Days of Operation at Daya Bay',  
D. Adey *et al.*, Phys. Rev. Lett. **121**, 241805 (2018).
3. 'Improved Search for a Light Sterile Neutrino with the Full Configuration of the Daya Bay Experiment',  
F.P. An *et al.*, Phys. Rev. Lett. **117**, 151802 (2016).
4. 'Measurement of  $\theta_{13}$ ',  
S.B. Kim and K.B. Luk, Ann. Rev. Nucl. Part. Sci. **65**, 329 (2015).
5. 'Observation of Electron-antineutrino Disappearance at Daya Bay',  
F.P. An *et al.*, Phys. Rev. Lett. **108**, 171803 (2012).
6. 'Measurement of Neutrino Oscillation with KamLAND: Evidence of Spectral Distortion',  
T. Araki *et al.*, Phys. Rev. Lett. **94**, 081801 (2005).
7. 'Search for CP Violation in Charged- $\Xi$  and  $\Lambda$  Hyperon Decays',  
T. Holmstrom, N. Leros *et al.*, Phys. Rev. Lett. **93**, 262001 (2004).
8. 'First Results from KamLAND: Evidence for Reactor Anti-neutrino Disappearance',  
K. Eguchi *et al.*, Phys. Rev. Lett. **90**, 021802 (2003).
9. 'Observation of the Decay  $K^- \rightarrow \pi^- \mu^+ \mu^-$  and Measurement of the Branching Ratios for  $K^\pm \rightarrow \pi^\pm \mu^+ \mu^-$ ',  
H.K. Park *et al.*, Phys. Rev. Lett. **88**, 111801 (2002).

10. 'Search For Direct CP Violation in Non-Leptonic Decays of Charged  $\Xi^-$  and  $\Lambda$  Hyperons',  
K. B. Luk *et al.*, Phys. Rev. Lett. **85**, 4860 (2000).
11. 'Measurement of the Bottom-Quark Production Cross Section in 800 GeV/c Proton-Gold Collisions',  
D.M. Jansen, M.H. Schub, C.S. Mishra, P.M. Ho *et al.*, Phys. Rev. Lett. **74**, 3118 (1995).
12. 'Nuclear Dependence of High- $x_t$  Hadron and High- $\tau$  Hadron-Pair Production in p-A Interactions at  $\sqrt{s} = 38.8$  GeV',  
P. B. Straub, D. E. Jaffe, H. D. Glass *et al.*, Phys. Rev. Lett. **68**, 452 (1992).
13. 'Dimuon Production in Proton-Copper Collisions at  $\sqrt{s} = 38.8$  GeV',  
G. Moreno *et al.*, Phys. Rev. D**43**, 2815 (1991).
14. 'Production Polarization of Magnetic Moment of  $\Xi^+$  Antihyperons Produced by 800 GeV/c Protons',  
P. M. Ho, K. B. Luk *et al.*, Phys. Rev. Lett. **65**, 1713 (1990).
15. 'New Measurements of Properties of the  $\Omega^-$  Hyperon',  
K. B. Luk *et al.*, Phys. Rev. D**38**, 19 (1988).