

Getting To Know The Neutrinos

Prof. Kam-Biu Luk

*University of California at Berkeley and
University of Hong Kong*

Time: Thursday, June 20, 2013, 4:30 p.m.

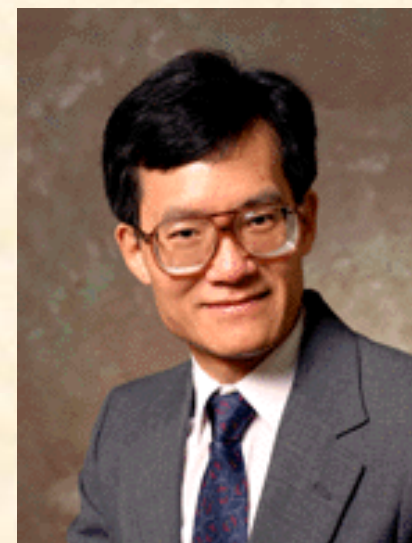
**Venue: Lecture Theatre P2, Chong Yuet Ming Physics Building,
The University of Hong Kong**

Abstract:

Although the neutrino was discovered about sixty years ago, we know very little about this ghostly elementary particle. For a long time, we thought the neutrinos were massless. However, the tide began to turn when we studied neutrinos originating from the Sun and the atmosphere in the eighties and nineties. We have observed that a neutrino moving in space can morph its identity, a fascinating phenomenon called neutrino oscillation. Furthermore, the existence of neutrino oscillation implies the neutrinos do possess mass after all. Recently, using antineutrinos generated by nuclear reactors, the third and last kind of neutrino oscillation was found. This exciting discovery has opened the floodgate for determining the ordering of the neutrino masses and exploring the potentially different oscillating behavior between the neutrinos and antineutrinos which, in turn, may explain why our Universe is dominated with matter only. In this colloquium, a brief history of the neutrino, the discoveries of neutrino oscillation, and some of the remaining open questions of neutrino physics will be presented.

About the Speaker:

Prof. Kam-Biu Luk is a Professor at the University of California, Berkeley and Hung Hing Ying Distinguished Visiting Professor in Science and Technology, University of Hong Kong. He received B.S. at University of Hong Kong in 1976 and Ph.D. at Rutgers University in 1983. He is a Fellow of the American Physical Society and the Overseas Chinese Physicist Association. He is also a co-spokesperson of the Daya Bay and Hyper CP Project, and a spokesperson of FNAL E756. Prof. Luk has received numerous awards, including Director's Award for Exceptional Achievement (Lawrence Berkeley National Laboratory), Cheung Kong Scholar (Ministry of Education, China), Outstanding Junior Investigator (U.S. Department of Energy). His research interest includes Neutrino physics, Strange- and Heavy-quark Physics, CP violation, Astrophysics.



Physics colloquium series is organized to introduce cutting edge researches and new development in physics, designed to be *suitable to graduate and undergraduate students, and also to scientists working on different fields*. Each colloquium will generally start with an extensive introduction of the background of the field, followed by forefront research topics and results. The colloquium will serve as an education forum for students and laymen alike, and also serve as a platform for exchange and update their knowledge of various branches of physics among academic staff members.

Coffee and tea will be served 20 minutes prior to the colloquium

Anyone interested is welcome to attend

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