What can we learn about non-standard model CP violation from Hadrons?

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About the Talk

Because the CP violation in the Standard Model of particle physics does not account for the excess of matter over antimatter in the universe, and thus our presence here, identifying non-standard model CP violation is a vitally important task. The recent report of a CP violation in the D system, which is significantly larger than Standard Model estimates has sent many people in search of non-standard model explanations of the data. Fewer are studying the reliability of the Standard Model estimates, but the question “What can we learn about non-standard model CP violation from Hadrons?” must be faced. CP violation has been observed in the K system and in the B system also, with occasional similar claims that non-standard CP violation has been observed. I will review the standard model calculations for all of these systems, discussing the reliability of the standard model estimates, paying particular attention to the B system. I point out that the electric dipole moment of the neutron, which has not yet been observed, is arguably the hadronic system in which standard model CP violation is most reliably estimated.

About the Speaker

Professor Bruce McKellar is the President-Designate of the International Union of Pure and Applied Physics. He is a Fellow of the Australian Institute of Physics, the Institute of Physics (UK), the American Physical Society, and the Australian Academy of Science. Professor McKellar has received the Boas Medal of the AIP, and the Massey Medal of the IoP and the AIP, and the Pawsey, Lyle and Flinders Medals of the Australian Academy of Science. Professor McKellar’s work is now concentrated on particle physics but has covered many aspects of physics such as atomic physics, solid state physics, statistical mechanics and mathematical physics. He has also published journals ranging from pure mathematics, meteorology to photographic engineering.

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Admission is free. Please register online at http://www.ntu.edu.sg/ias/pheader
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