



ICFO Colloquium JOACHIM ULLRICH 'Physical Units and Fundamental Constants - Changing with Time?'

JOACHIM ULLRICH

July 04, 2014

Friday, July 4th, 12:00, ICFO's Auditorium

JOACHIM ULLRICH

President Physikalisch-Technische Bundesanstalt (PTB) Before becoming the 14th President of the prestigious PTB, Prof. Joachim Ullrich was Director and scientific member of Max Planck Institute for Nuclear Physics in Heidelberg. His background in physics lies in atomic, molecular and laser physics as well as in precision spectroscopy. With his group at the MPI for Nuclear Physics, he looked into the interaction of atoms and molecules with highly intense laser fields among other things. In this way he studied the dynamics of chemical reactions on the femtosecond scale and carried out experiments with ultra-short X-ray pulses at the free-electron laser at DESY in Hamburg and at SLAC National Accelerator Laboratory in Stanford, USA.

Among the most important honours in his scientific career to date are the Leibniz Prize of the Deutsche Forschungsgemeinschaft (German Research Foundation) awarded in 1999 and the Philip Morris Research Award received in 2006.

On the occasion of the meeting of the General Conference on Weights and Measures of the Metre Convention in 2018 it is envisaged to redefine the International System of Units (SI) to be based on fundamental constants in the future: the velocity of light, the charge of the electron, the Boltzmann, Avogadro and the Planck constants, the Cs hyperfine clock transition and the luminous efficacy. In the talk I will provide an overview on the progress, challenges and future perspectives of the new "Quantum SI" and discuss the question on whether or not the fundamental constants are indeed constant in time.

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