

# 2<sup>nd</sup> C2N COLLOQUIUM

(co-organized with Institut d'Optique)

December 13<sup>th</sup>, 2019 - 10am

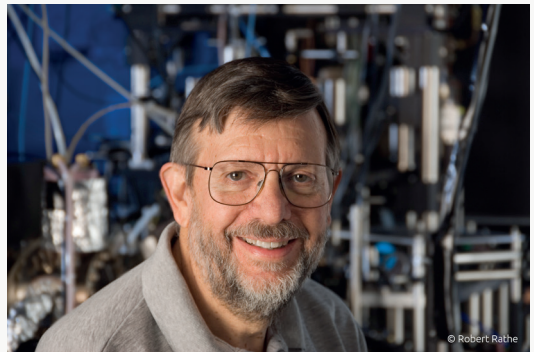
## New Measure: the reform of the International System of Units

**Abstract:** The metric system began with the French revolution, and now we are experiencing the greatest revolution in measurement since the French revolution. The definitions of the kilogram, ampere, kelvin, and mole are all changed, being based on chosen and fixed values for Planck's constant, the electron charge, Boltzmann's constant, and Avogadro's number. I will explain how this is possible, why it was necessary, and speculate about future changes in the SI.

**Bio:** William D. Phillips received his Ph.D. from MIT in 1976. In 1978, after a postdoc, he joined the U.S. National Institute of Standards and Technology (NIST) in Gaithersburg where he began NIST's Laser Cooling and Trapping Group. That group, now part of the Joint Quantum Institute, developed many of the techniques now used world-wide for laser cooling and cold atom experiments. In 1997, Dr. Phillips shared the Nobel Prize in Physics «for development of methods to cool and trap atoms with laser light.»

### Prof. D. William Phillips

Professor at National Institute of Standards and Technology (NIST) and University of Maryland  
Nobel Prize in Physics in 1997 together with Claude Cohen-Tannoudji and Steven Chu



*The seminar will be followed by a discussion between William D. Phillips and PhD students and Post-docs, and a cocktail will be served in the C2N main hall.*

*External visitors should register with an e-mail at [com@c2n.upsaclay.fr](mailto:com@c2n.upsaclay.fr)*