Centre de Nanosciences et de Nanotechnologies

Séminaire

Lundi 02 octobre 2017

10h30 – C2N, Site Orsay salle 44 (R. Planel)

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"Single electron pumps for the revision of the SI unit Ampere "

Résumé

In 2018 the General Conference on Weights and Measures will revise the International System of Units (the SI). In the "New SI" four of the SI base units, the kilogram, the ampere, the kelvin and the mole, will be redefined in terms of fixed values of four natural constants, namely the Planck constant h, the elementary charge e, the Boltzmann constant kB, and the Avogadro constant NA. By fixing the value of e the base unit ampere can be directly realized by so-called single electron pumps emitting a single electron at a repetition frequency f to generate the quantized current I = ef.The talk will focus on the present state of single electron pumps for the direct representation of a the “new” ampere.