Joint EE & IBI SEMINAR

“DNA Sequencing by Tunneling”

Monday – May 27, 2013 – 3:15 p.m.
EPFL – room SV 1717a

Prof. Massimiliano Di Ventra

Department of Physics
University of California San Diego
La Jolla, CA (USA)

co-hosts: Profs. A. Radenovic (IBI) & Y. Leblebici (EE)

Abstract

“Personalized medicine” refers to the ability of tailoring drugs to the specific genome of each individual [1]. It is however not yet feasible due the high cost and slow speed of present DNA sequencing methods. I will discuss a DNA sequencing protocol we suggest that requires the measurement of the distributions of transverse currents during the translocation of single-stranded DNA into nanopores [2-5]. I will show that such a sequencing approach can reach unprecedented speeds, thus opening up the possibility for personalized medicine. I will also discuss recent experiments that support these theoretical predictions and are a step forward toward making personalized medicine a reality [6].

References


See current IBI seminar calendar at http://ibi.epfl.ch/seminars