SEMPARIS – Séminaires en région parisienne

http://string.lpthe.jussieu.fr/semparis/

Cours

Mardi 4 Mai 2021, 10:30

LPTMC, on-line, INSP(https://zoom.us/j/3630156422?pwd=anVyV3BkUXQ5RDVwaGg2SFk0N

Domaines : cond-mat.mes-hall

Titre: An introduction to quantum computing by a skeptic: lecture 1

Orateur: Xavier Waintal (CEA Grenoble)

Résumé: This set of three lectures is essentially a basic introduction to quantum computing from a physicist point of view. For each theoretical concept, I will try to analyse what it would take for an actual hardware to work in practice and identify probable bottlenecks. The talks should be accessible to anyone with a working knowledge of quantum mechanics. The lectures will be organised around a few questions:

Lecture 1) What's a quantum computer? How can a quantum computer be exponentially faster than a classical one? What would it take to get this to work?

Lecture 2) How could one get rid of the ubiquitous and infamous decoherence with "quantum error correction"? Is this feasible?

Lecture 3) Where are we now? Have we really reached quantum supremacy? And what does supremacy mean by the way?