LOUGHBOROUGH PHYSICS

DEPARTMENT OF PHYSICS

Loughborough University

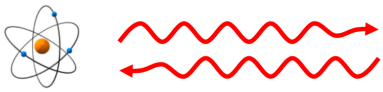
Want to know what goes on behind the lab door?
Physics research talks 2023-24

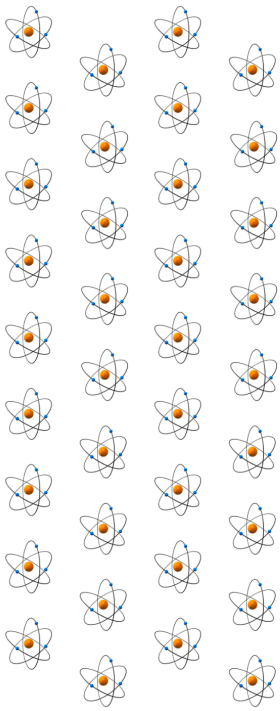
Prof Claudia Eberlein, Dean of Science

Quantum theory for nanotechnology

Wed 24 Apr 2024, 16.00 DAV1.108

Simple quantum systems, like a hydrogen atom, or an electron, are considered to be well understood in quantum electrodynamics. For example, we know the energy levels in the hydrogen atom to a fantastic degree of accuracy, and we understand the mechanisms behind fine and hyperfine shifts as well as the Lamb shift that originates from quantum field theory. However, all those theoretical descriptions invariably assume that the hydrogen atom we look at is the only one in the Universe! In reality, quantum systems can be strongly affected by what is around them and theoretical descriptions for such even vaguely realistic scenarios are very difficult. The lecture explains a few examples of quantum theory with “stuff” around the quantum system under consideration, the difficulties one encounters, some astonishing results, and most importantly the fascination of quantum theory in such settings.





All welcome! Prior knowledge of quantum mechanics not required

https://www.lboro.ac.uk/departments/physics/events/seminars/research-talks/

If you would like to give a talk in this series next year, please contact John Samson