Quantum computing and simulation with semiconductor spins

L.M.K. Vandersypen[1]

1 – QuTech and Kavli Institute of Nanoscience, TU Delft, Lorentzweg 1, 2611HE Delft, Netherlands
l.m.k.vandersypen@tudelft.nl

This talk will present our latest (unpublished) advances along two research directions: 1) the realization of the building blocks behind our vision of a large-scale spin-based quantum processor, and 2) analog and digital quantum simulation using quantum dot registers. This includes high-fidelity spin qubit control methods, results based on shuttling electron spins, coupling spins via microwave photons, studies of spin waves and discrete time crystals.