ICFO



# INSIGHT SEMINAR: What can quantum computers do for you today?

GUIFRE VIDAL

April 30, 2026
12:00 to 13:00
Elements Room

This could be a very short talk. But it won't. Current quantum computers can already simulate quantum systems at a scale beyond the reach of Earth's largest (classical) supercomputers. The real question is: what are current quantum computing experiments good for? [Spoiler: I don't know; but I was hoping that if I give this talk many times, someone will come up with a great idea.] I will summarize the currently available experiments (digital and analog) and try to bridge the language barrier between quantum computing and condensed matter / high energy physics. By the end of the talk, maybe you can tell me what we should be doing with a square grid of about 100 qubits, coherently evolving (through nearest-neighbor two-qubit interactions or gates) for about 50 time cycles.

**Hosted by:** Prof. Dr. Robert Sewell