

QUANTUM INTERNET PROTOCOLS AND QUANTUM HACKING

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As we learn to interface quantum computers via quantum communication systems, a variety of novel issues arise: How do we seamlessly connect quantum computers that operate via radically different technologies and that function on widely differing time scales? Coherent quantum internet protocols may allow us to access quantum information on distributed quantum networks in a way that preserves quantum coherence. Are there significant advantages to such protocols over existing classical internet protocols?

Not all users of the quantum internet are likely to be virtuous. How might a quantum hacker operate? And what techniques are available to foil quantum hackers?

This talk will discuss these issues in the context of recent experiments using superconducting flux qubits with tunable couplings.