PHYSICS COLLOQUIUM

PROFESSOR RODNEY VAN METER

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RODNEY VAN METER RECEIVED A B.S. IN ENGINEERING AND APPLIED SCIENCE FROM THE CALIFORNIA INSTITUTE OF TECHNOLOGY IN 1986, AN M.S. IN COMPUTER ENGINEERING FROM THE UNIVERSITY OF SOUTHERN CALIFORNIA IN 1991, AND A PH.D. IN COMPUTER SCIENCE FROM KEIO UNIVERSITY IN 2006. HIS CURRENT RESEARCH CENTERS ON QUANTUM COMPUTER ARCHITECTURE AND QUANTUM NETWORKING. OTHER RESEARCH INTERESTS INCLUDE STORAGE SYSTEMS, NETWORKING, AND POST-MOORE'S LAW COMPUTER ARCHITECTURE. HE IS NOW AN ASSOCIATE PROFESSOR OF ENVIRONMENT AND INFORMATION STUDIES AT KEIO UNIVERSITY'S SHONAN FUJISAWA CAMPUS. HE IS THE VICE CENTER CHAIR OF KEIO'S NEW QUANTUM COMPUTING CENTER AND THE CO-CHAIR OF THE INTERNET RESEARCH TASK FORCE'S QUANTUM INTERNET RESEARCH GROUP. DR. VAN METER IS A MEMBER OF AAAS, ACM AND IEEE.

THE QUANTUM INTERNET

NOVEMBER 8 | 2:30 PM

130 HAHN HALL NORTH

"The Quantum Internet will transform how we communicate, compute and measure our universe. Using long-distance entanglement, we can execute cryptographic functions that strengthen the security of classical communications, measure physical phenomena more precisely than purely classical systems, and ultimately couple quantum computers together to extend the size of problems they can solve. But how can we build such a network? Experimental progress toward quantum repeaters -- the quantum equivalent of the Internet's switches and routers -- is moving at a dizzying rate, and theorists have proposed half a dozen approaches to managing errors to create high-fidelity entanglement along a chain of repeaters. The next frontier is extending from one-dimensional chains to complex topologies, and on to a network of networks -- a true Quantum Internet. In this talk, I will bridge the physics and the engineering to give a picture of the current status and open research problems."

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