

Plenary Talk PV I Mon 9:00 Paulussaal
From quantum foundations to quantum communication technologies and back — ●NICOLAS Gisin — Group of Applied Physics, University of Geneva, Rue de l'Ecole de Médecine 20, 1205 Geneva, Switzerland — Constructor University, Geneva, Switzerland
Quantum information science emerged from studies on the foundations

of quantum physics. I'll illustrate this, starting from Bell inequalities all the way to commercial Quantum Key Distribution and Quantum Random Number Generator chips. But the story doesn't stop here. Quantum information science, in turn, feeds back into the foundations, asking questions like, e.g., "how does non-locality manifest in quantum networks" and "how should one describe joint quantum measurements (especially when paying attention to energy conservation)".