



Institute colloquium

Institute Colloquium: Uncertainty determines the non-locality of quantum mechanics

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Host:

Two central concepts of quantum mechanics are Heisenberg's uncertainty principle, and a subtle form of non-locality that Einstein famously called "spooky action at a distance". These two fundamental features have thus far been distinct concepts. In this talk, we'll see that they are inextricably and quantitatively linked. Quantum mechanics cannot be more non-local with measurements that respect the uncertainty principle. In fact, the link between uncertainty and non-locality holds for all physical theories. More specifically, the degree of non-locality of any theory is determined by two factors -- the strength of the uncertainty principle, and the strength of a property called "steering", which determines which states can be prepared at one location given a measurement at another.

Monday, June 18, 2012 04:30pm - 05:30pm

Raiffeisen Lecture Hall, Central Building



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