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General properties of Nonsignaling Theories[1]

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We present a series of properties, usually associated to quantum physics, and show that they are common to all theories that do not allow for superluminal signalling and predict violation of Bell inequalities. These include intrinsic randomness, no cloning, monogamy of correlations, uncertainty relations, privacy of correlations, bounds on the shareability of some states. Finally, we emphasize that correlation data must violate some Bell inequality in order to contain distillable secrecy and introduce a new QKD protocol and prove its security against any individual attack by an adversary only limited by the no-signalling condition.

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