Non-Local Games and Their Parallel Repetition

In this talk, we give an introduction to the world of nonlocal games

among an arbitrary number of players. These games allow to quantify the

difference between classical, quantum and non-signaling strategies.

An important question for such nonlocal games is their behavior under

parallel repetition. For nonlocal games with three or more players, very

little is known up to present on their behavior under parallel

repetition; this is true for the classical, the quantum and the

non-signaling value. In this work, we show a parallel repetition theorem

for the non-signaling value of a large class of multi-player games, for

an arbitrary number of players. Specifically, we prove that if the

original game has a non-signaling value smaller than 1, then the

non-signaling value of the n-fold parallel repetition is exponentially

small in n.

joint work with Harry Buhrman and Serge Fehr

arxiv: <http://arxiv.org/abs/1312.7455>