

Theory CANADA 4 Conference
Conférence Théorie CANADA 4
4-7 June/Juin, 2008

Entanglement Simulation and Channels

André Allan Méthot
Institute for Quantum Computing
University of Waterloo
200 University Ave. W.
Waterloo, Ontario N2L 3G1
CANADA

amethot@iqc.ca

Abstract

“Nature is non-local”, said Bell. The discussion has been picked recently by the quantum information community when they asked “How much non-local?” To answer this, many simulation models have been put forth with the concept that the more resources are needed to simulate entanglement, the more non-local Nature is.

Recent work in entanglement simulation has revealed many links between the different simulation models. We propose here a universal formalism to tackle these question with a uniform language: channel theory.

The concepts of non-locality, entanglement simulate and channel theory will be reviewed with the perspective of bringing everything together at the end.