



The Abdus Salam
International Centre for Theoretical Physics



School on
NEW TRENDS IN QUANTUM DYNAMICS AND ENTANGLEMENT
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QUANTUM CHANNELS WITH MEMORY

1. Memoryless Classical and Quantum Channels and their Capacities

Nilanjana DATTA

University of Cambridge, Centre for Mathematical Sciences
DPMMS, Dept. of Pure Mathematics & Mathematical Statistics
Cambridge CB3 0WB, U.K.

Abstract:

In the first lecture we give a brief review of classical and quantum channels. The notion of capacity of a channel is introduced and the various different capacities of a quantum channel are discussed. Expressions for these capacities were originally evaluated for the so-called memoryless channels, which are discussed next. The need for considering channels with memory is then elucidated through some practical examples.