



The Abdus Salam  
International Centre for Theoretical Physics



School on  
NEW TRENDS IN QUANTUM DYNAMICS AND ENTANGLEMENT  
14 - 18 February 2011

## OUT OF EQUILIBRIUM, DRIVEN OPEN QUANTUM SYSTEMS

### 1. A Quantum Toolbox for Biological Systems

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#### Abstract:

In this lecture we introduce basic mechanisms that would enable biological systems to create and maintain quantum effects, e.g. entanglement in a hostile environment. By means of the spin gas model, a semi-quantal model from quantum information theory, we identify these mechanisms and discuss how they operate.