



UNIVERSITY OF CRETE  
DEPARTMENT OF PHYSICS



QCN

CRETE CENTER FOR  
QUANTUM COMPLEXITY  
AND NANOTECHNOLOGY

**ΓΕΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ**

## **PHYSICS COLLOQUIUM**

**Thursday, 19 March 2015**

**17:00 -18:00**

**3<sup>rd</sup> Floor Seminar Room**

**“Quantum Zeno Dynamics and Quantum Zeno Subspaces”**

**Prof. Saverio Pascazio**

University of Bari & INFN

### **Abstract**

We analyze the quantum Zeno effect that arises for frequent projections onto a multi-dimensional subspace. Under such conditions, the system remains in the “Zeno subspace” defined by the measurement, undergoing a “quantum Zeno dynamics” with very interesting features. Some significant examples will be proposed and their practical relevance discussed. We comment on the control of decoherence, irreversibility and the drawbacks due to the inverse Zeno effect. We focus on three recent experiments performed in Paris and Florence. We discuss promising methods for tailoring nonclassical states.