



**Speaker** Dr. Felipe Fanchini,  
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**Location** University of Regensburg, Dept. of Physics  
Room PHY 5.0.21

**Time** Thursday, 28th January 2010  
3:15 p.m.

**Title** Protection of quantum information

**Abstract**

In this presentation we briefly talk about the main methods used to protect quantum information, e. g., quantum error correction codes (QECC), decoherence free subspaces (DFS), and dynamical decoupling (DD). Focusing on the DD, which is a decoherence control technique based on high-frequency and high-amplitude periodic fields, we present a procedure to calculate an arrangement of continuous applied fields that protect the quantum logical gates. Furthermore, by using the SWAP quantum gate, we demonstrated (at least in theory) that a "simple" scheme to universal quantum computation can be reached.

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