

Workshop “Mathematical aspects of quantum chaos”  
**Atelier «Aspects mathématiques du chaos quantique»**  
June 2-6, 2008/2 au 6 juin 2008

## Scarring on invariant manifolds for quantum maps on the torus

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### **Abstract**

Quantum maps on the torus are toy models for quantum mechanical systems with underlying chaotic classical dynamics. For such systems almost all eigenstates become equidistributed on the torus in the semi-classical limit. Nevertheless, for linear maps that preserve an invariant co-isotropic sub-manifold (this could only happen when the dimension is  $> 2$ ) it is possible to find eigenstates that become localized on this sub-manifold. In this talk I will describe this phenomenon, and show that it is stable under certain nonlinear perturbations