OOD SHABTAI, University of Toronto Mississauga
Localization of quantum systems at Liouville tori

We consider a collection of pairwise commuting quantum observables defined via Berezin-Toeplitz quantization of a closed Kähler manifold, and assume that the Arnold-Liouville theorem applies to their principal symbols. We use the joint eigensections of these observables to define isometric embeddings of the quantum spaces into the space of square integrable functions on a fixed Liouville torus; these embeddings may be viewed as a type of semiclassical localization. We discuss applications for contractions of Lie algebra representations and (time permitting) for pairs of spectral projections of quantum observables.