**Topological suppression of quantum tunneling** JIA-HUA GU, KAI
SUN, University of Michigan, Ann Arbor — In this talk, we prove that if we bring
together two band insulators with different topology, described by arbitrary topolog-
ical indices, there must exist specific momentum points in the Brillouin zone where
the wavefunctions of the two insulators are orthogonal and cannot hybridize. For
2D insulators, this conclusion implies that topology will prohibit tunneling of elec-
trons between the two insulators at this momentum. This conclusion can also be
generalized to some strongly-correlated topological systems. Explicit demonstration
and proof will be provided for topological band insulators and fractional quantum
Hall states.

Jia-Hua Gu
University of Michigan, Ann Arbor