1154-19-598 **Terry A Loring***, 1 University of New Mexico, Department of Mathematics and Statistics, MSC01 1115, Albuquerque, NM 87131. *A numerical approach to Chern numbers and unbounded Fredholm modules.* Preliminary report.

A quasiperiodic Hamiltonian H, where Hilbert space is built on the vertices of a quasiperiodic tiling of the plane, can exhibit the properties of a Chern insulator. Calculating the gaps in $\sigma(H)$ and labeling these by K-theory can be a challenge. Forming a Dirac-type operator from H and the position operators X and Y gives a way to relate a Fredholm index with the signature a finite-dimensional, but large, matrices. Hence the necessity of numerical K-theory.

Some of the work to be presented was joint with Hermann Schulz-Baldes (Received September 08, 2019)