

## Objective

- Determine techniques to invert the band structure of CdTe/HgTe/CdTe heterostructure and create topological insulator edge states

## Method

- 8-band k.p Hamiltonian for ZB crystals
- Strain added using Bir-Pikus deformation potentials

## Results

- Critical width less than experimentally observed 6.3 nm achieved by using CdHgTe alloy instead of HgTe
- Optimal combination of growth-axis and strain direction determined for least critical width below 6.3 nm
- Electric field can be used to make the CdTe/HgTe/CdTe heterostructure toggle between TI and non-TI state → Switch action

