Outline

- Tectonic setting
  - Transform plate boundaries
  - Escape structures in the hinterland of plate collision zones
  - Transfer zones in thrust belts or normal fault systems
- Development of a strike slip fault
- Strain within a strike slip shear zone – en echelon structures
- Releasing bends and restraining bends

Plate Motions
Transform Plate Boundaries

Transform:
Link between other kind of plate boundaries

Evolution of the Plate Boundary

San Andreas System
Oceanic Transforms
Age of the Ocean Floor map

Oceanic Transform Fault

Crust formed between times 1 and 2
Total displacement since time 1

Mid-ocean ridge
Inactive fracture zone
Active transform
Intraplate Deformation: Continental Collisions

Transfer zones in Thrust and Extensional Systems

Link between Two segments of a rift

Bends in Strike-slip Faults
Releasing bend
Bends in Strike-slip Faults
Restraining bend

Positive Flower Structure
Ardmore Basin, Oklahoma

Flower Structures

Transverse Ranges-San Andreas Fault

Clay
Wood
Development of a Strike-slip fault

Clay cake experiments (Wilcox, Hardy and Seely, 1973)

En Echelon Fractures

Large strike-slip faults start as a set of shorter fractures arranged *En Echelon.*

Strain Pattern in a Shear Zone

Tilt of the strain ellipse
Orientation of Folds and Thrusts
Right-lateral Strike-slip

Orientation of Normal faults and Veins
Right-lateral Strike-slip