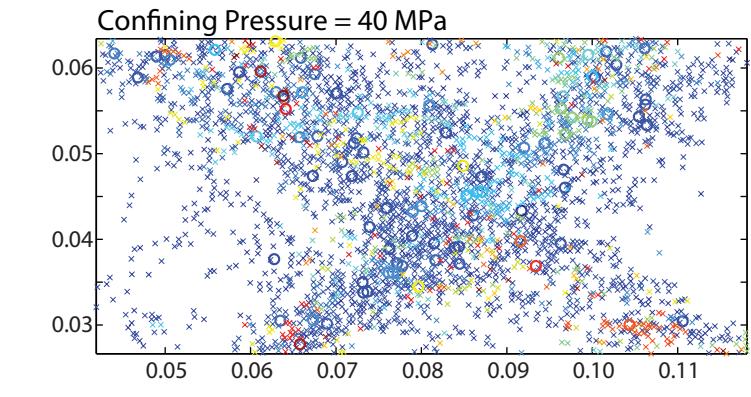
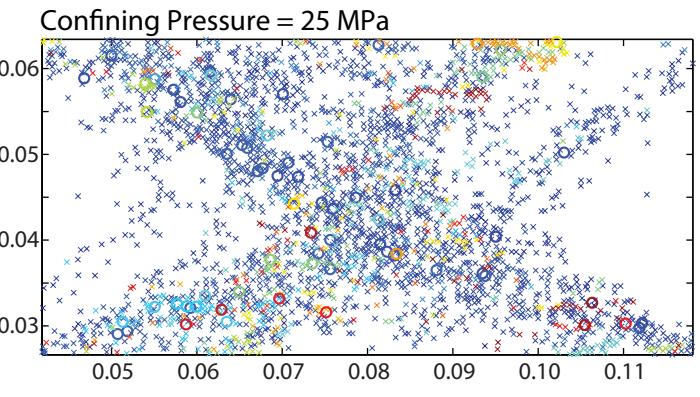
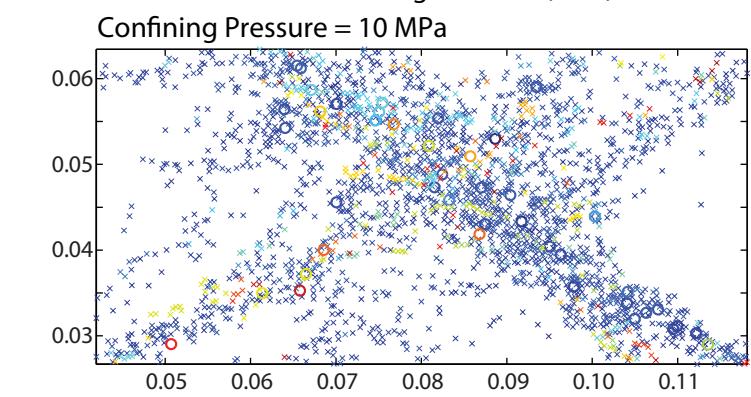
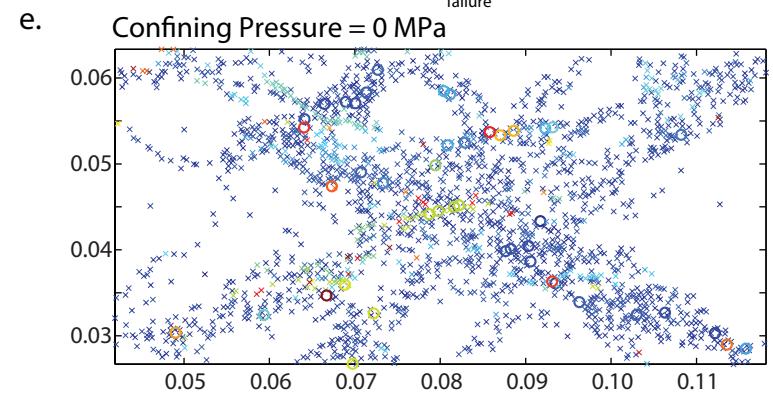
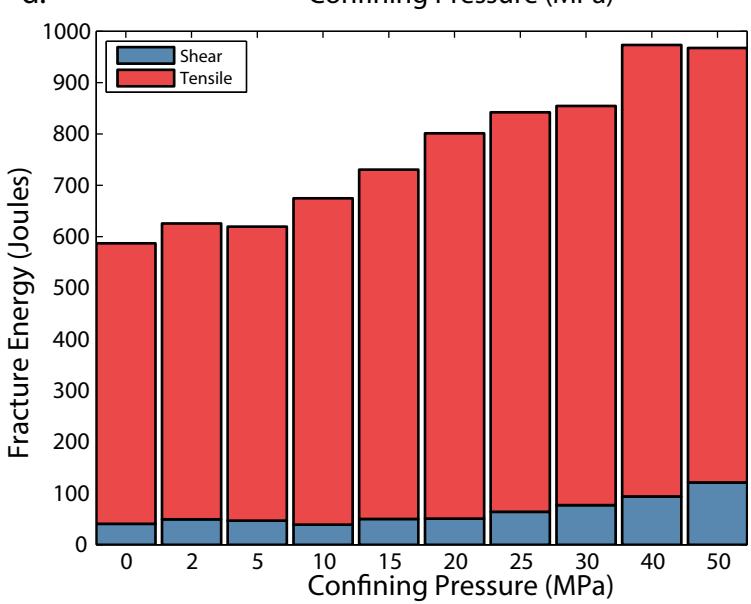
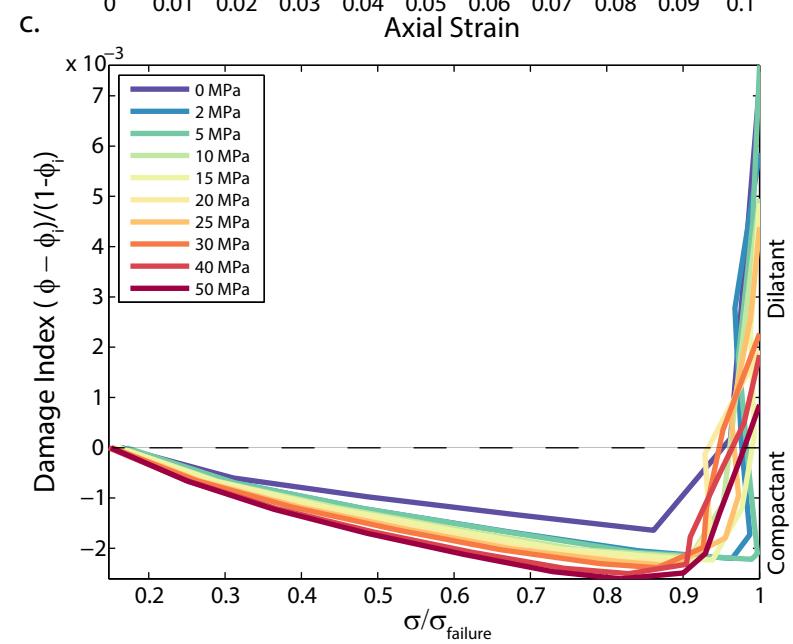
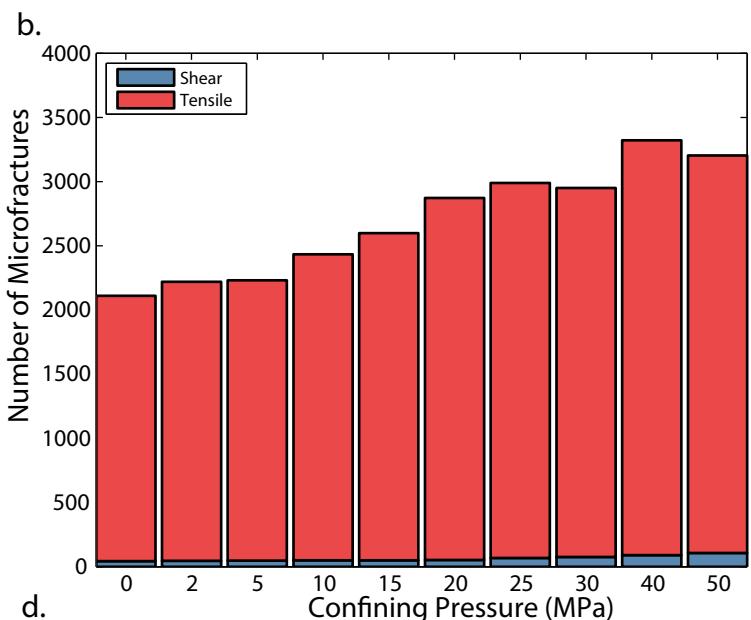
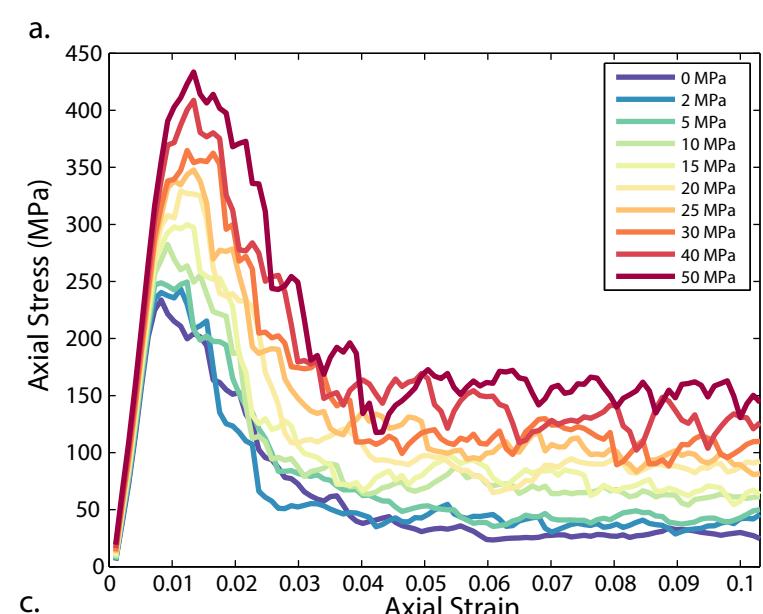


x Tensile
o Shear

0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10 0.11

Axial Strain



Legend:

- \times Tensile
- \circ Shear

Color scale: 0 to 0.1

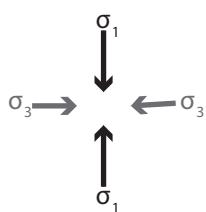


a.

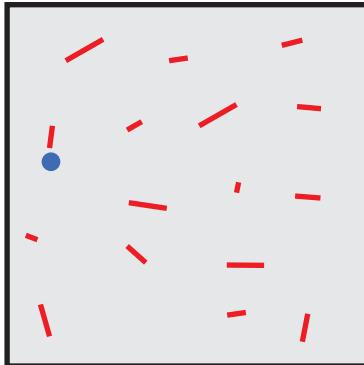
Berea Sandstone
Low Confining Pressure

Transition to shear
micro-mechanics
with increasing
Confining Pressure

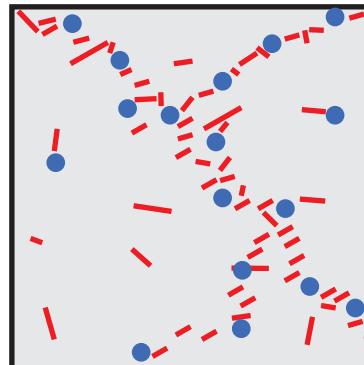
High Confining Pressure



Stage 1: Initialization

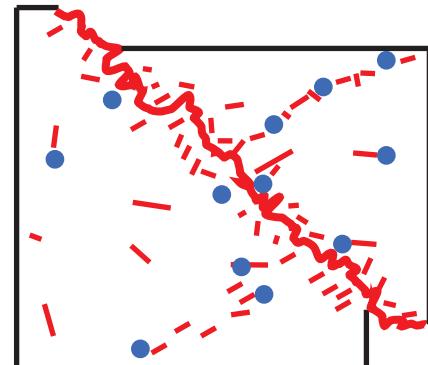


Stage 2: Nucleation

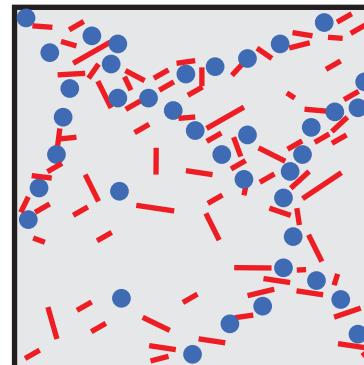
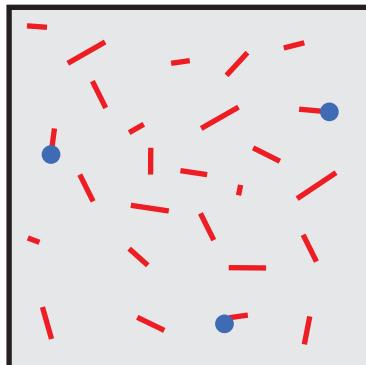


Localization of compactant
and dilatant damage

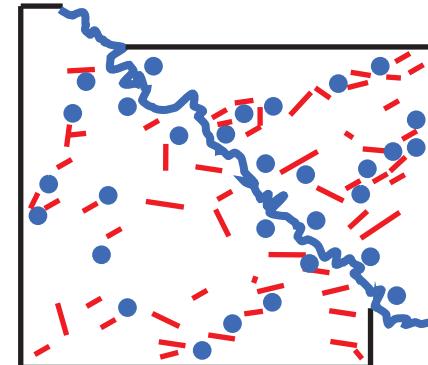
Stage 3: Rupture



Damage Index > 0
Dilatant Fracture Zone



Localization of compactant
and dilatant damage



Damage Index < 0
Compactant Fracture Zone

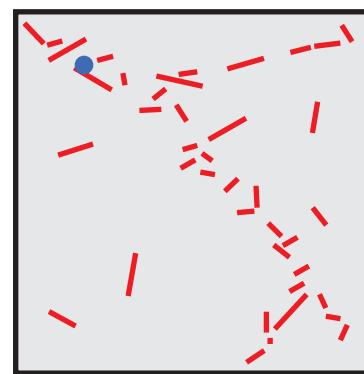
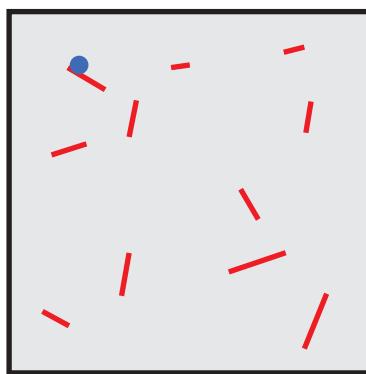
b.

Lac du Bonnet
Granite

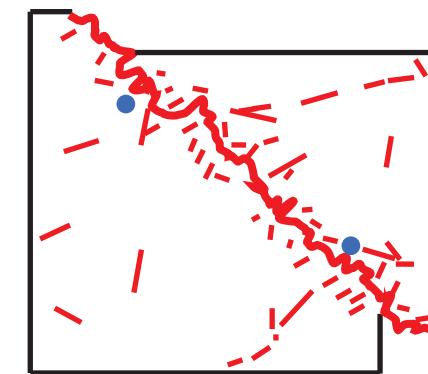
Low Confining Pressure

Increase in tensile
microracking with
increasing Confining
Pressure

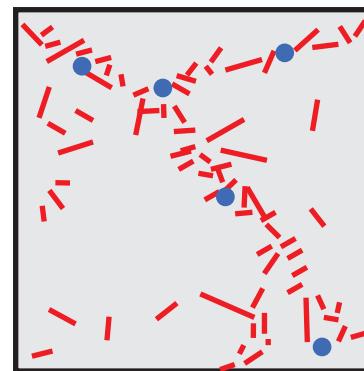
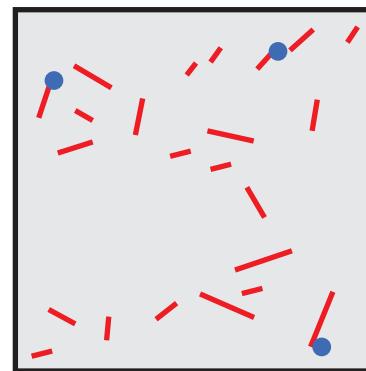
High Confining Pressure



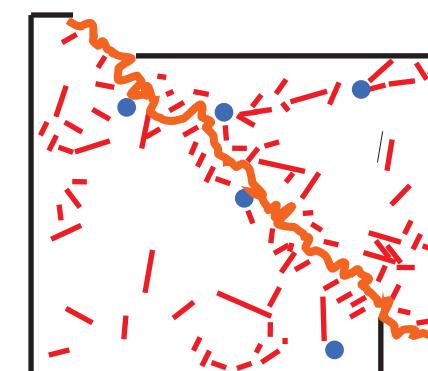
Localization of dilatant damage



Damage Index > 0
Dilatant Fracture Zone



Localization of dilatant damage



Damage Index > 0, but declining
Dilatant Fracture Zone

