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## Class Highlights #2

On Wednesday, we began by clarifying the direction of the principal stresses in the three types of faults, where  $\hat{e}_3^*$  is in the vertical direction for a normal fault and  $\hat{e}_1^*$  is horizontal for a thrust fault. Next, we discussed Byerlee's Law, which is an empirical law derived from laboratory experiments that determine shear and normal stress during frictional sliding. The rate of increase in the amount of shear stress required for sliding decreases around 200 MPa of normal stress, becoming independent of rock type. Pore pressure is also an important factor in failure in many rocks. Pore pressure can reduce  $\sigma_I$  and  $\sigma_{III}$ , moving the Mohr's circle closer to the axis and to the failure criteria. Pore pressure reduces the effect of asperities, making failure easier. Finally, we introduced flow laws for olivine and quartz and used them to discuss a Christmas tree diagram.