Minimum Work Applied to Frictional Faults: Analytical and Numerical Approach

Leonardo Cruz & George Hilley. Department of Geological and Environmental Sciences, Stanford University, Stanford, CA

We aim to investigate the effect of systematically varying the coefficient of sliding friction on preexisting thrust/ramp faults to evaluate their activity based on minimum work theory.

Our data suggest that frictional heterogeneities, in both theoretical and numerical simulations, can control fault reactivation (Out-of-Sequence). Our next goal will be to couple realistic surface erosion rules to the uplifting fault blocks to evaluate their effect on fault activity.