2005 Joint Assembly
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HR: 09:45h
AN: **G21A-06**
TI: Strain Accumulation Across the Central San Andreas Fault: Impact of Laterally Varying Crustal Properties
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AB: Major strike slip fault systems, such as the San Andreas Fault, have one common characteristic: lateral juxtaposition of geologically dissimilar terrains. Terrains on opposite sides of the fault may vary in both geometry of the elastic upper crustal layer and in their material properties. The Carrizo segment of the San Andreas Fault is a prime area to study the effects of asymmetry imposed by strike slip faulting because it is a straight segment and exhibits relatively simple seismic behavior. We present new GPS data on the Carrizo segment to quantify the asymmetry, as well as a series of numerical models designed to investigate various classes of asymmetry. Our models are implemented with the finite element technique, and investigate differences in elastic layer thickness and variable material properties of the upper crust. We find that available data are well fit by a simple model whereby a relatively weak zone (approximating the upper and middle crust) 10-20 km wide exists on the northeast side of the fault.
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