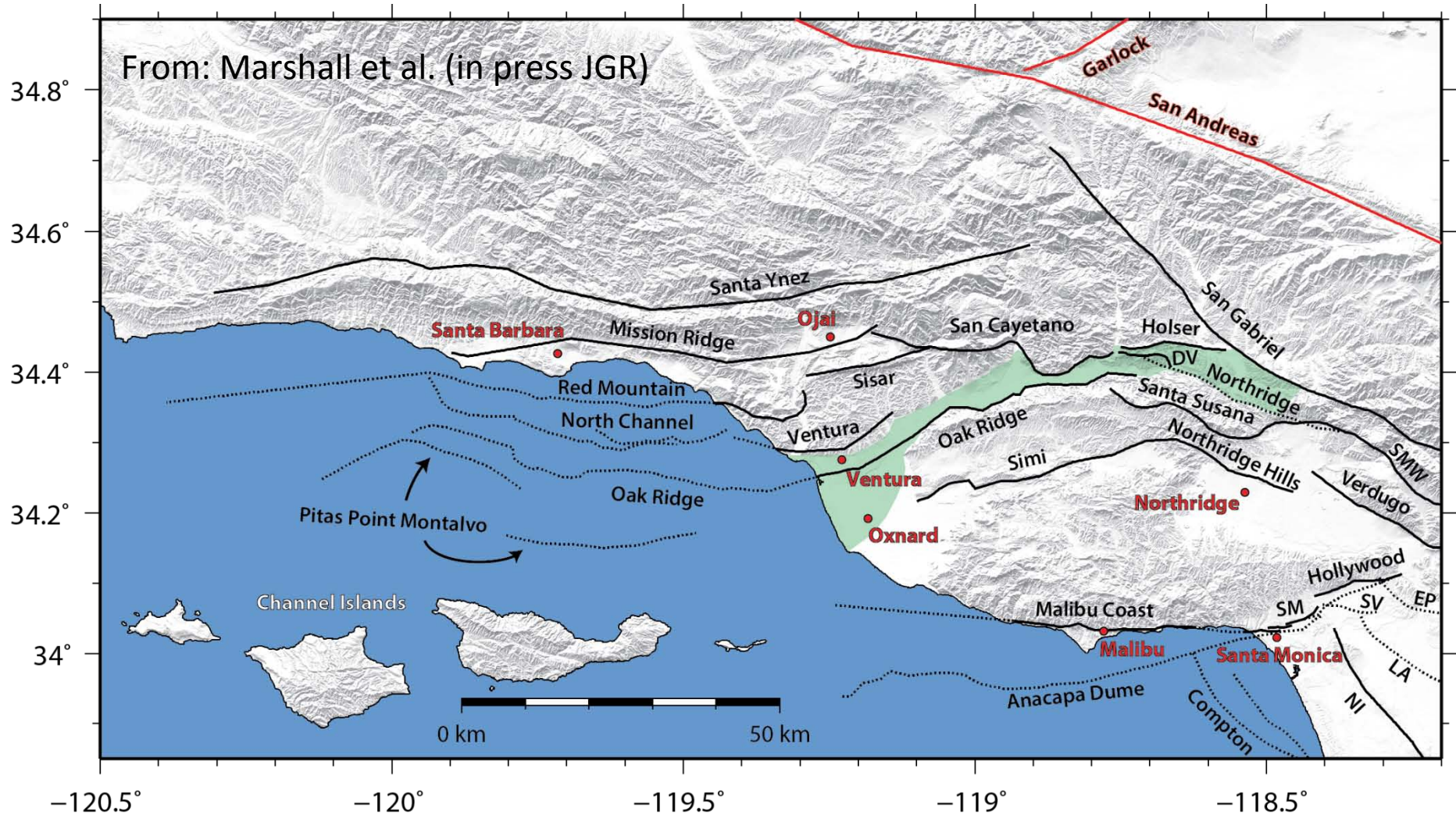


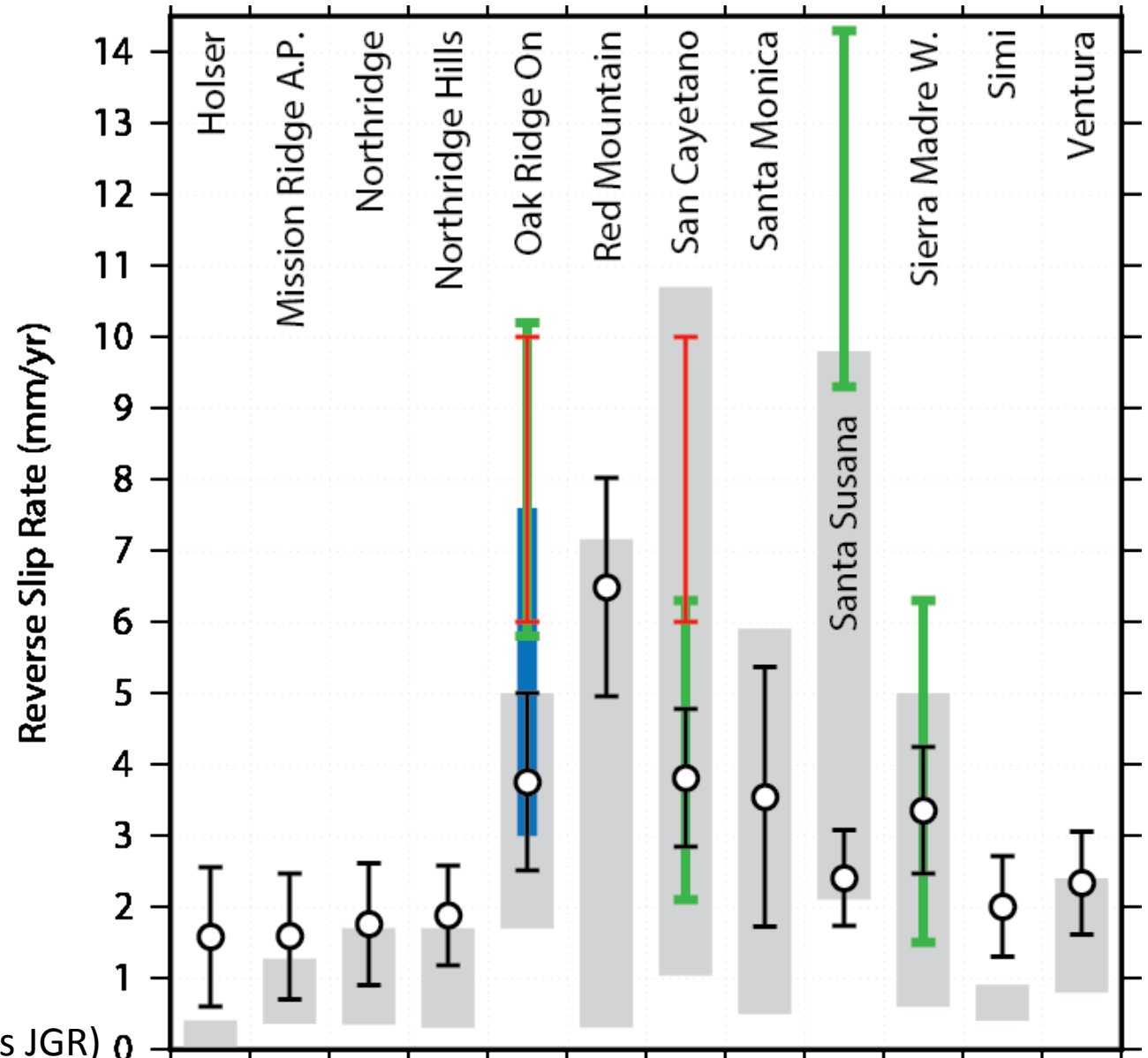
Regional Fault Geometry



- Regional fault network is complex
- Most models greatly simplify fault structure

Mechanical Models: Fault Slip Rates

- Long and short term slip rates are compatible

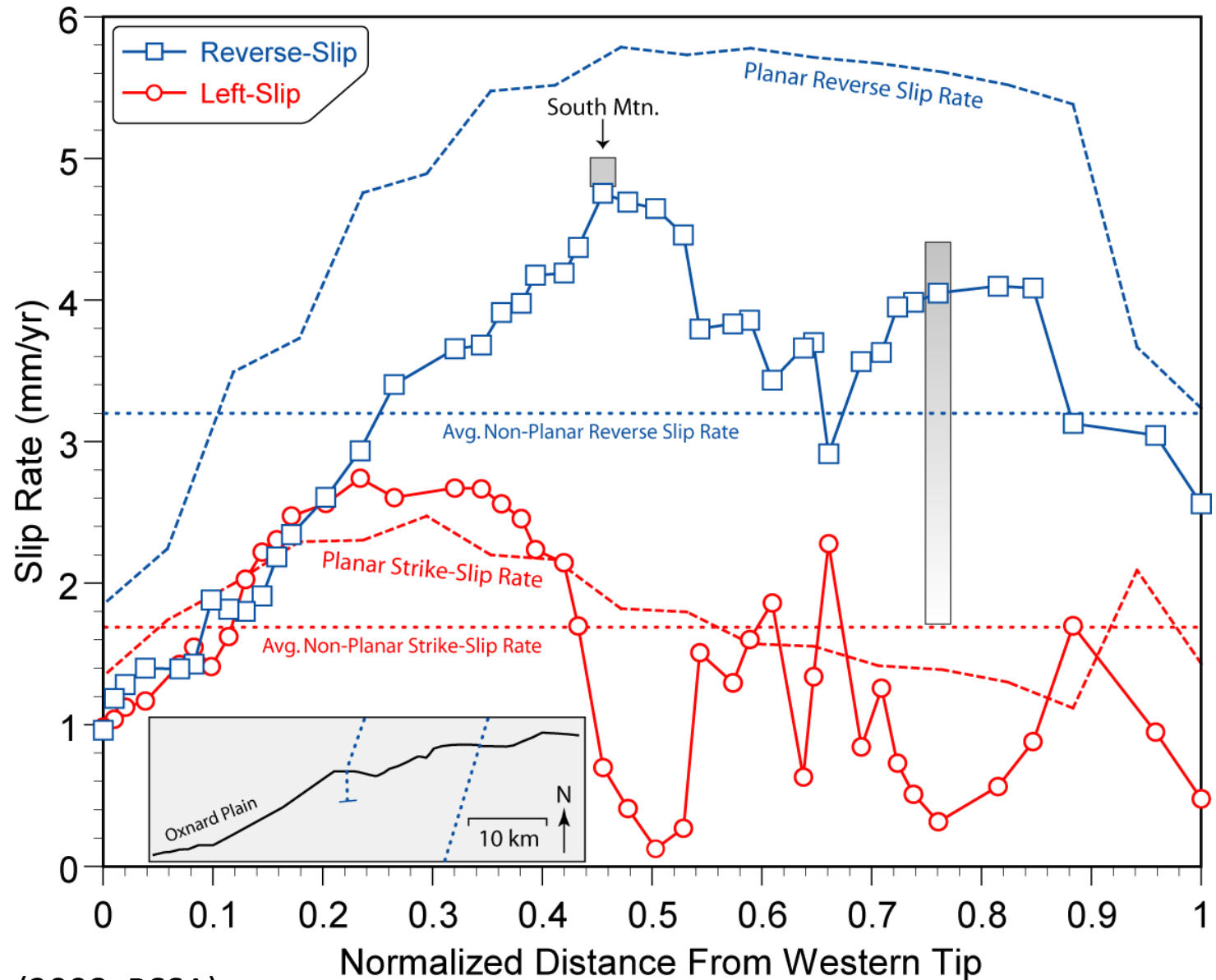


From: Marshall et al. (in press JGR)

Mechanical Models: Slip Distributions

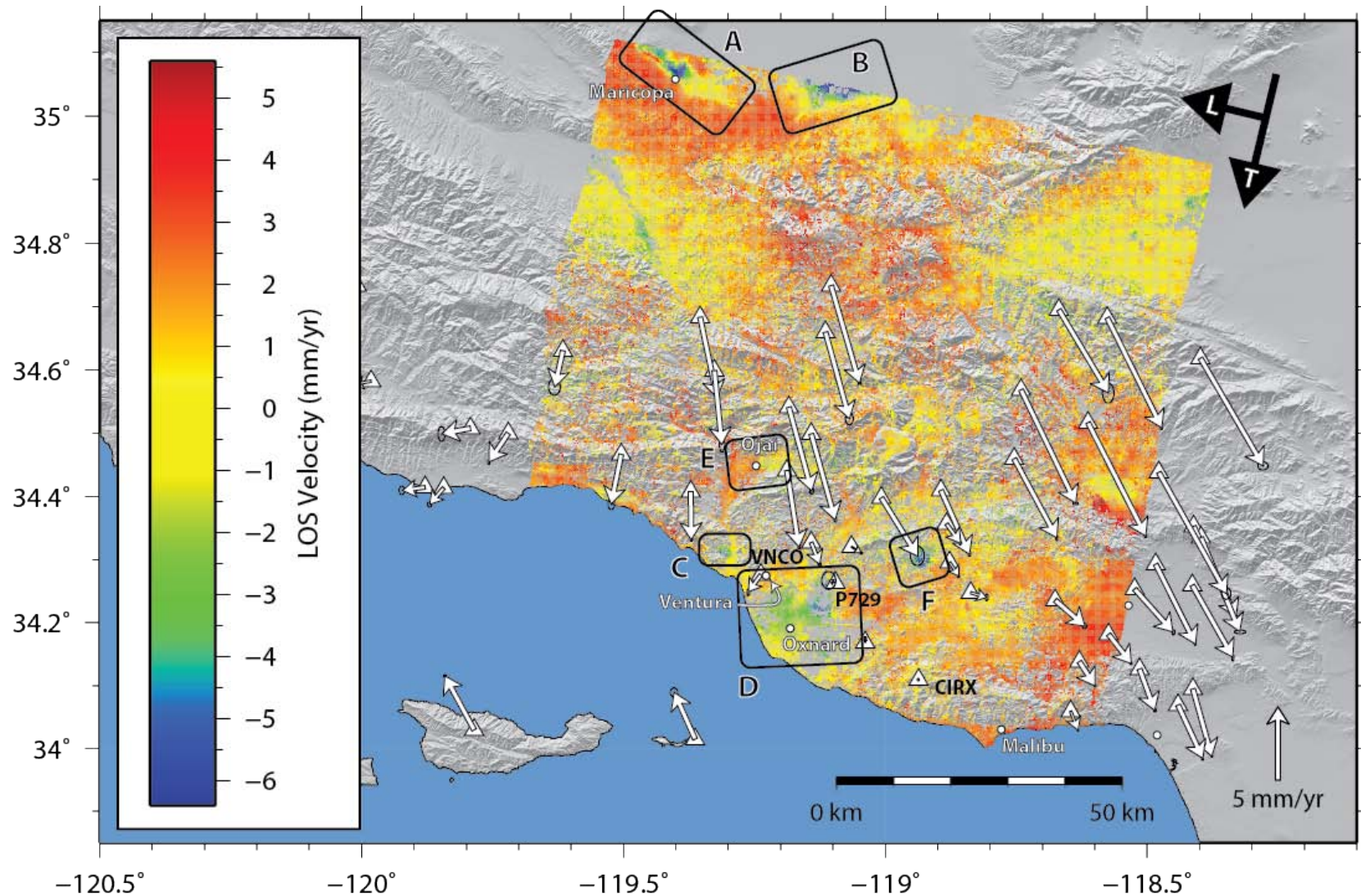
Near-surface slip for Oak Ridge Fault

- Slip distributions are complex
- Planar fault models are not reliable



From: Marshall et al. (2008, BSSA)

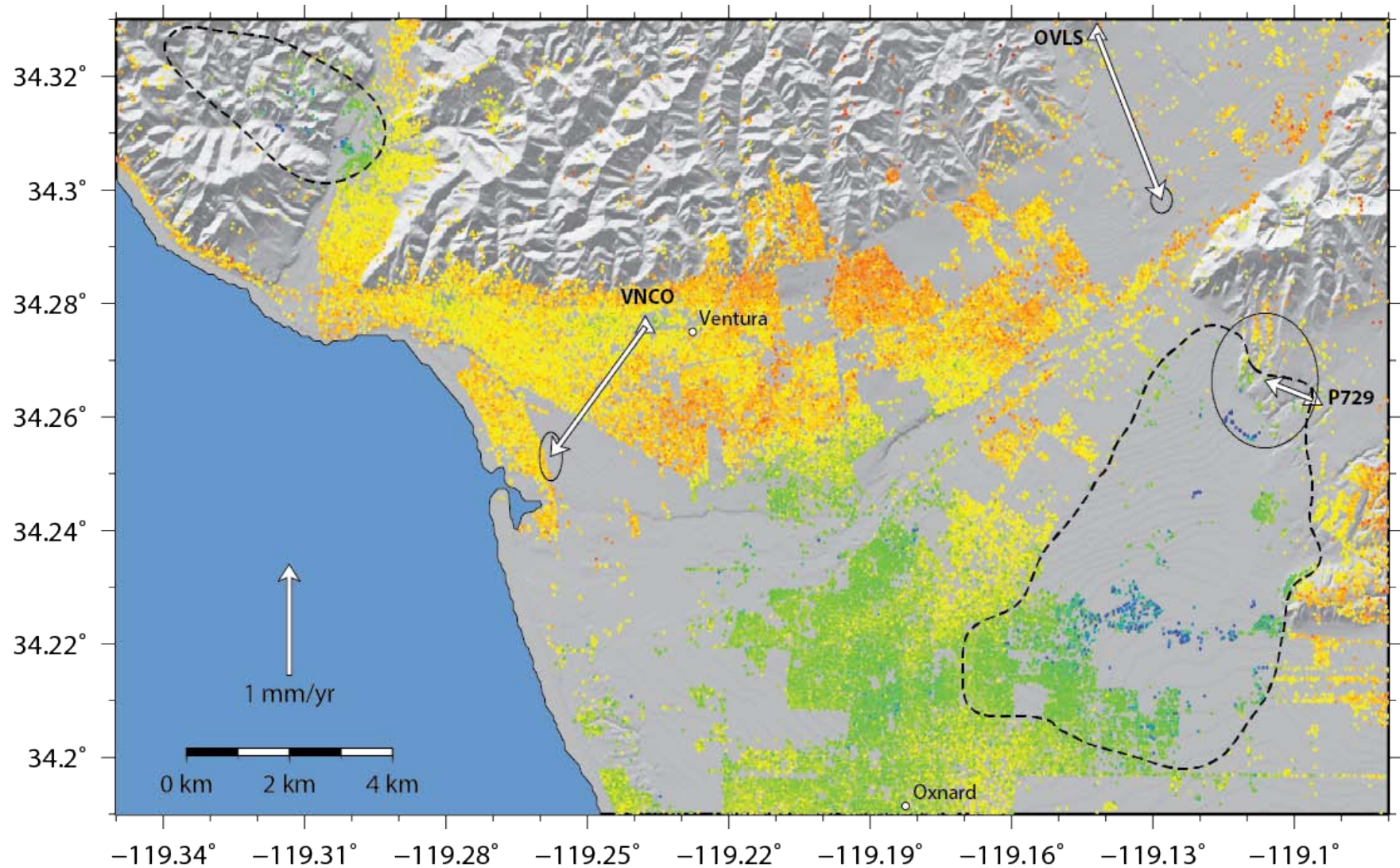
Persistent Scatterer InSAR Data



- Most GPS sites are uncontaminated

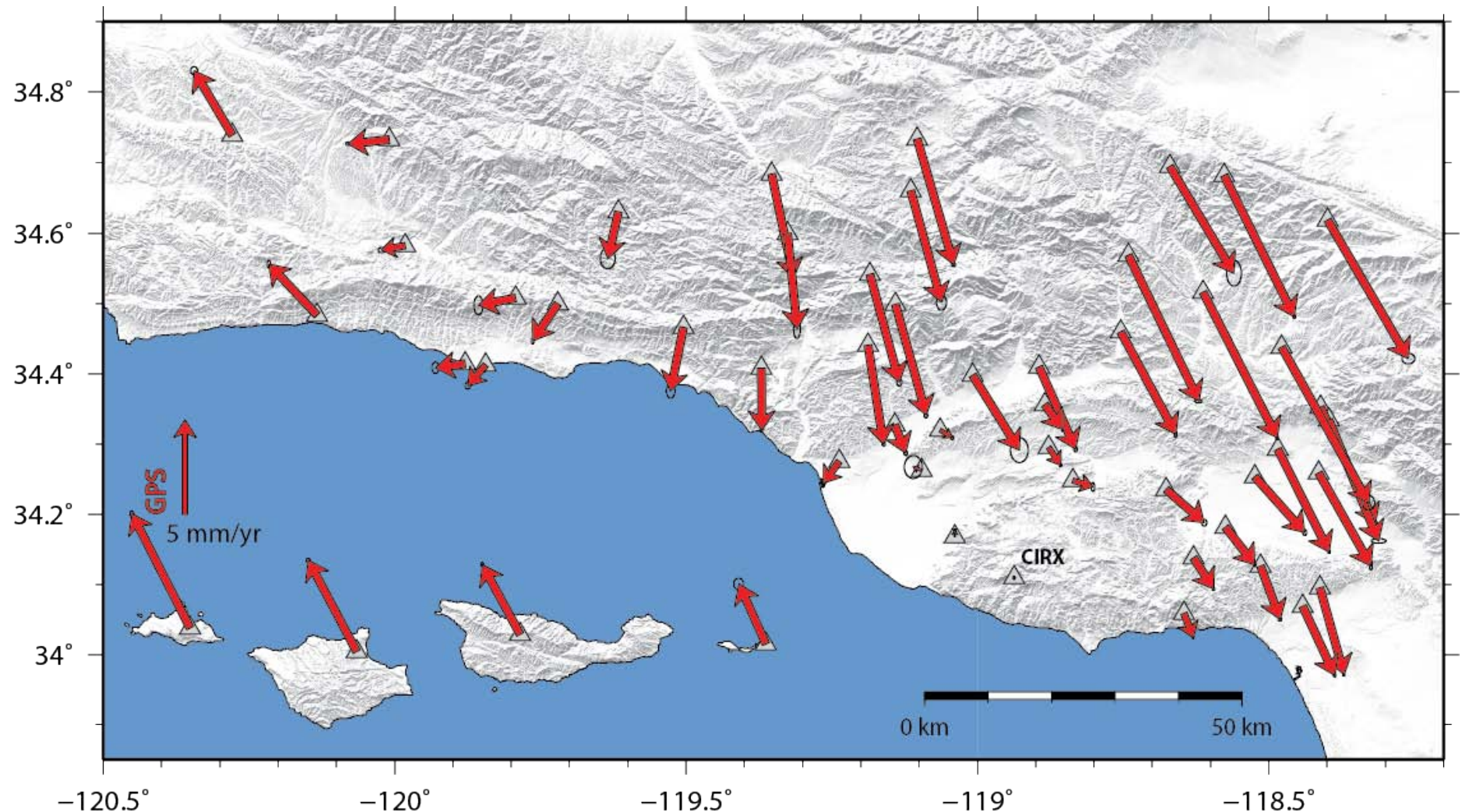
From: Marshall et al. (in press JGR)

Persistent Scatterer InSAR Data



- Hydrocarbon Extraction along Ventura Ave anticline produces only localized deformation
 - Site P729 appears to be contaminated by anthropogenic motion
- From: Marshall et al. (in press JGR)

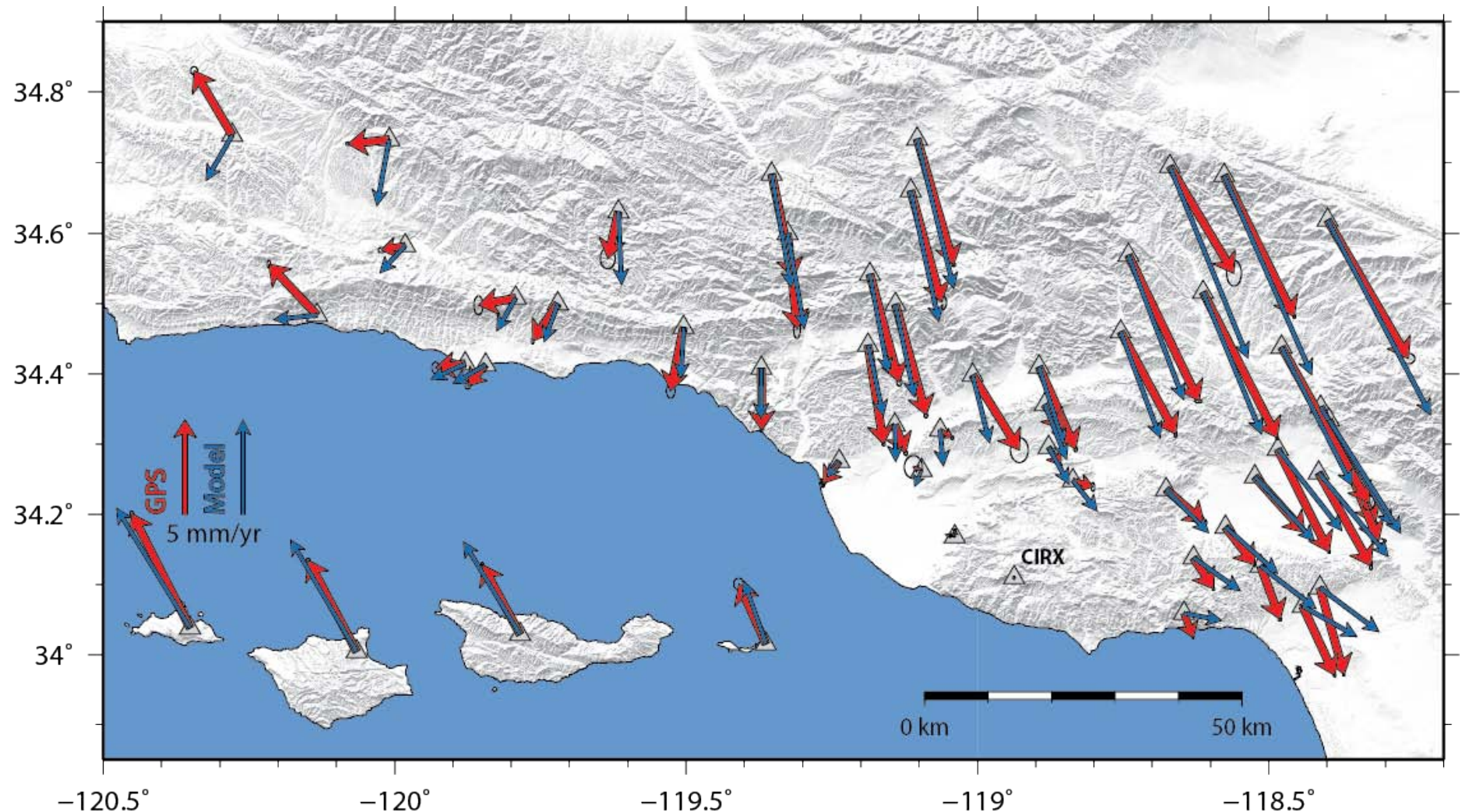
GPS, InSAR, and Interseismic Deformation



- GPS (relative to CIRX) after removal of SAF interseismic effects

From: Marshall et al. (in press JGR)

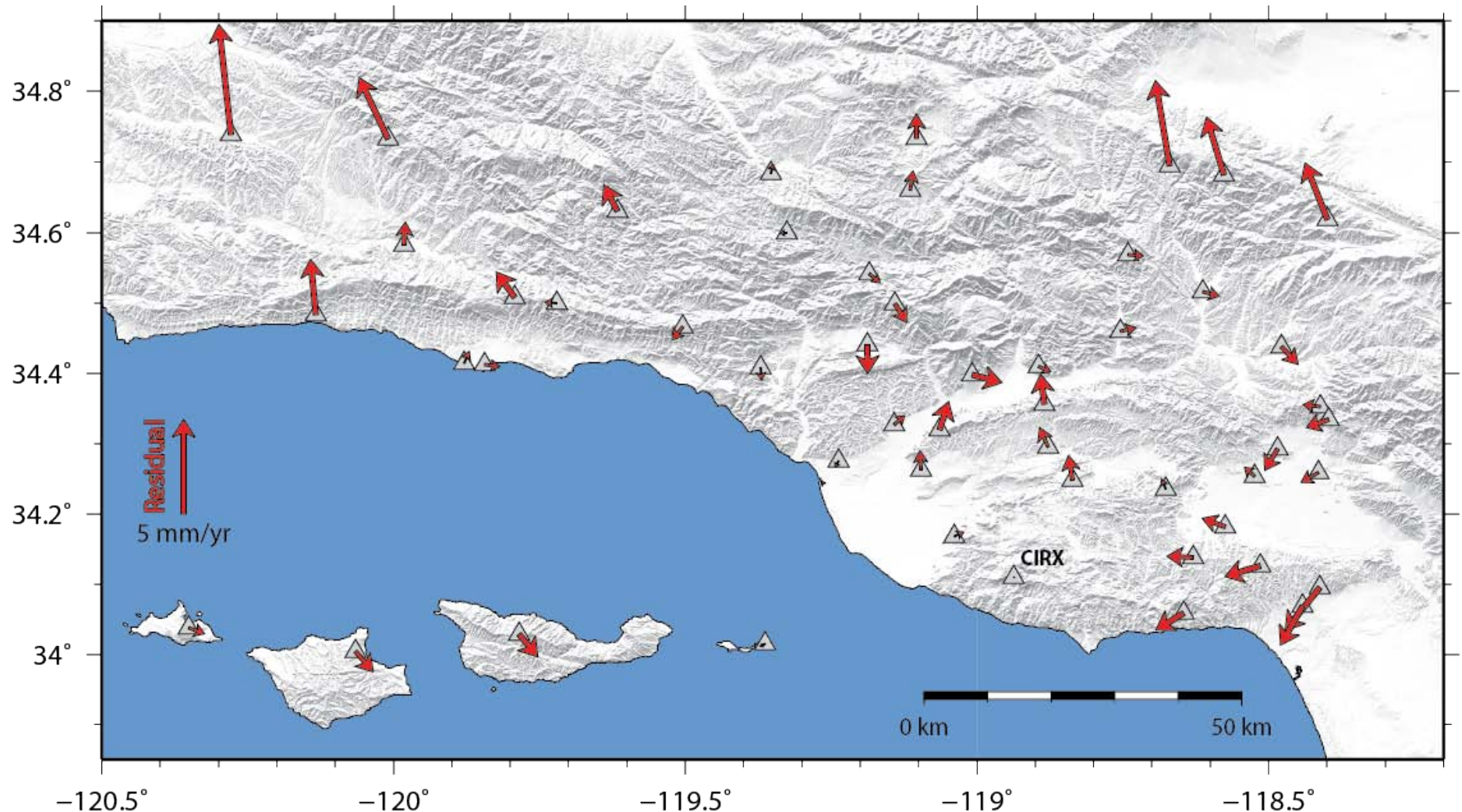
GPS, InSAR, and Interseismic Deformation



- GPS and Interseismic Mechanical model Velocities using CFM surfaces

From: Marshall et al. (in press JGR)

GPS, InSAR, and Interseismic Deformation

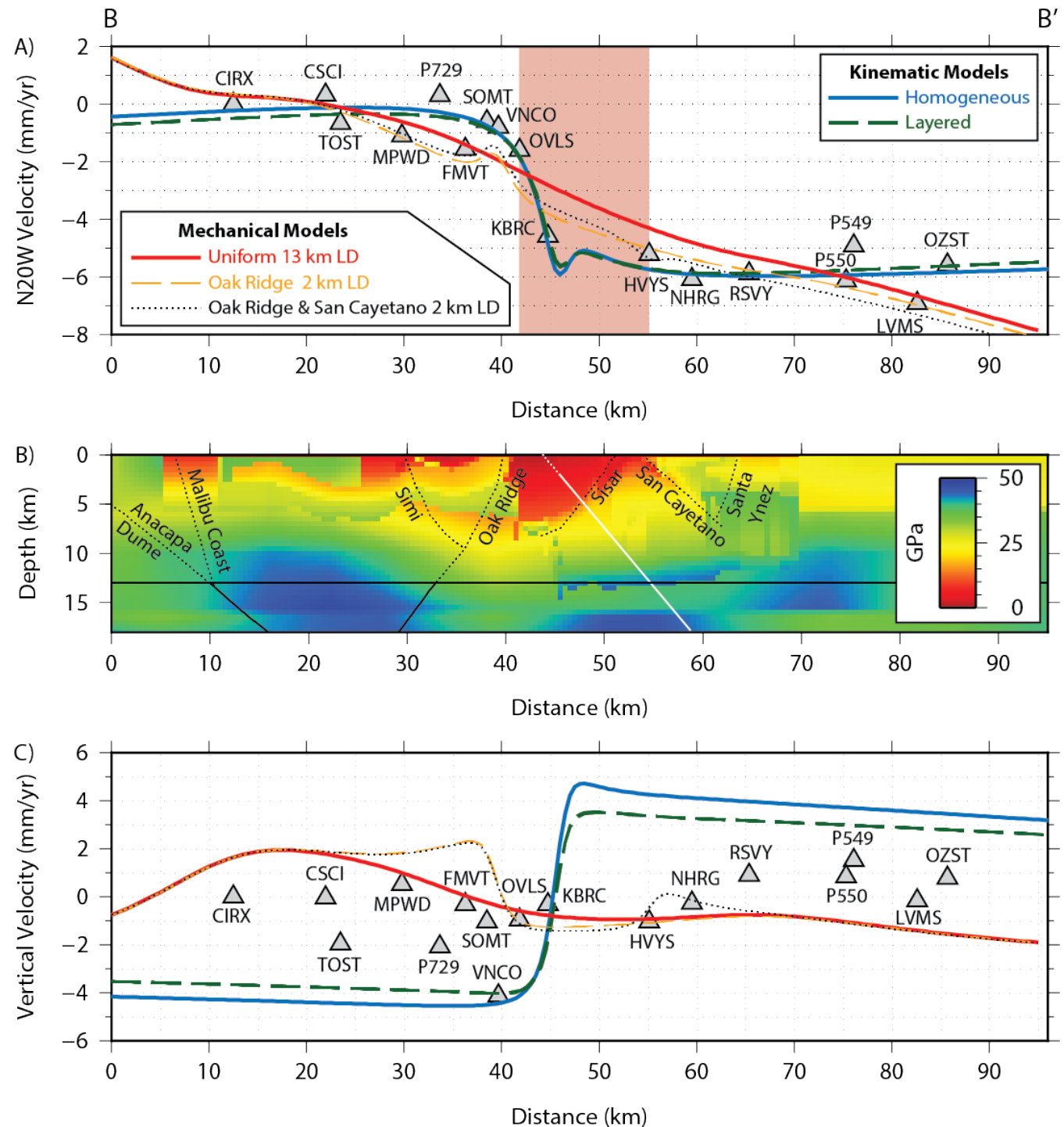


- GPS/Model Residual Velocities

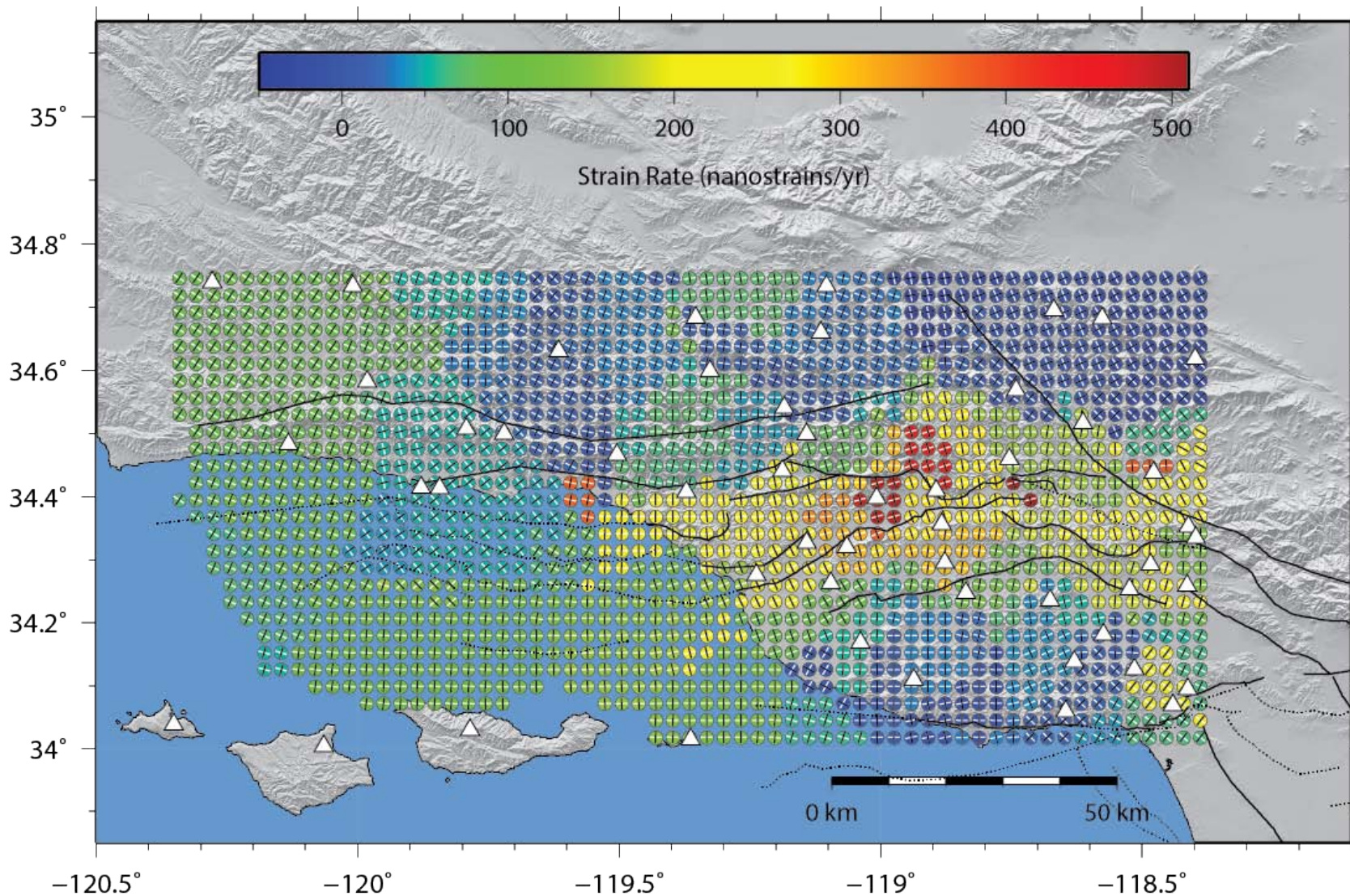
From: Marshall et al. (in press JGR)

Model Fits to GPS Data

- Difficult to match both horizontal and vertical GPS
- GPS shows fast localized horizontal strains, but little to no vertical gradients

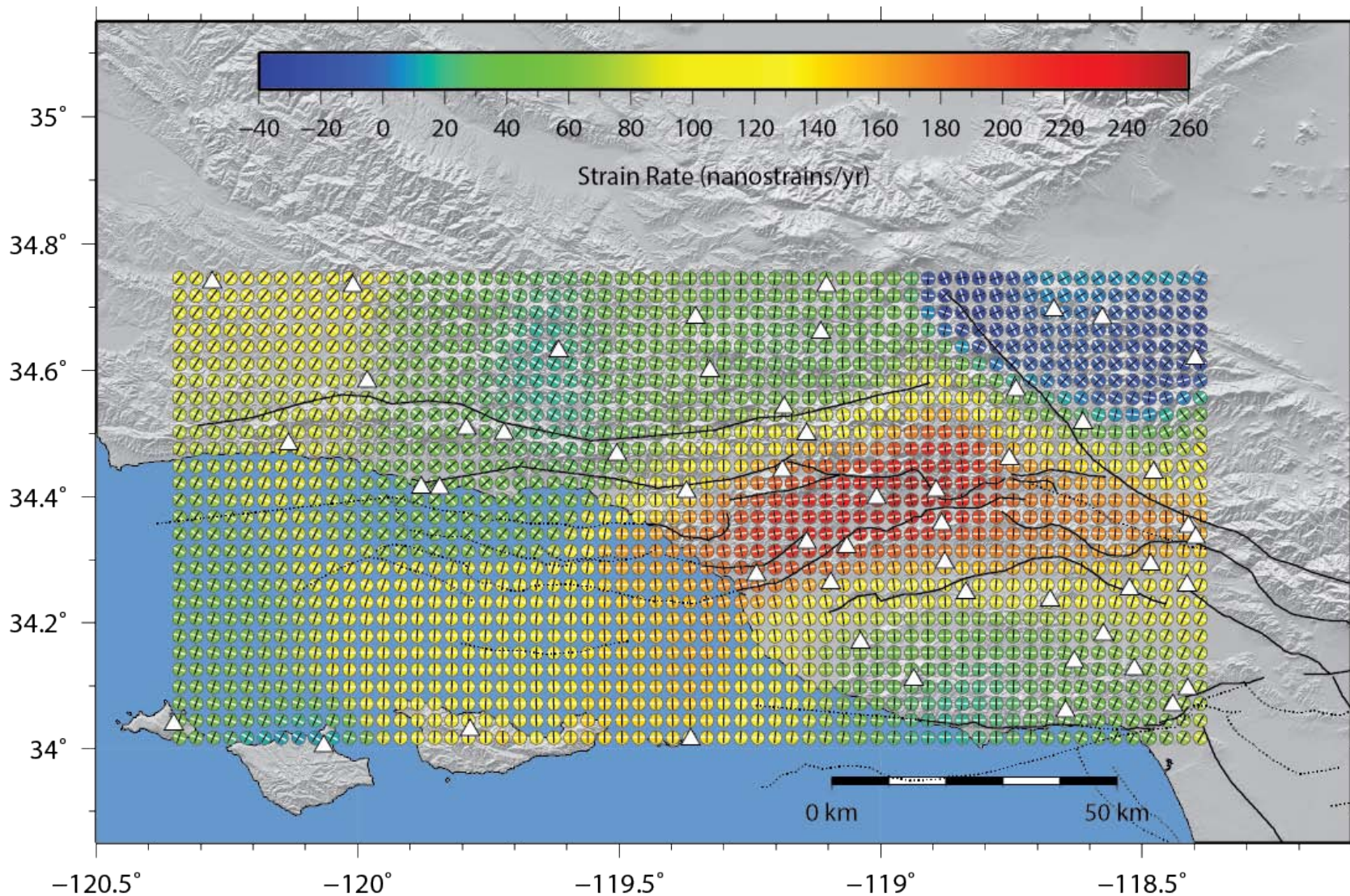


Strain Rate Maps



- Nearest Neighbor Interpolated Inversion of GPS Velocities
 - Showing Max Princ Contraction (Colors) & Dirs (ticks)
- From: Marshall et al. (in press JGR)

Strain Rate Maps



- Distance-weighted or smoothed inversion of GPS velocities
- Showing Max Princ Contraction (Colors) & Dirs (ticks) From: Marshall et al. (in press JGR)