

Stress at San Geronio

Egill Hauksson

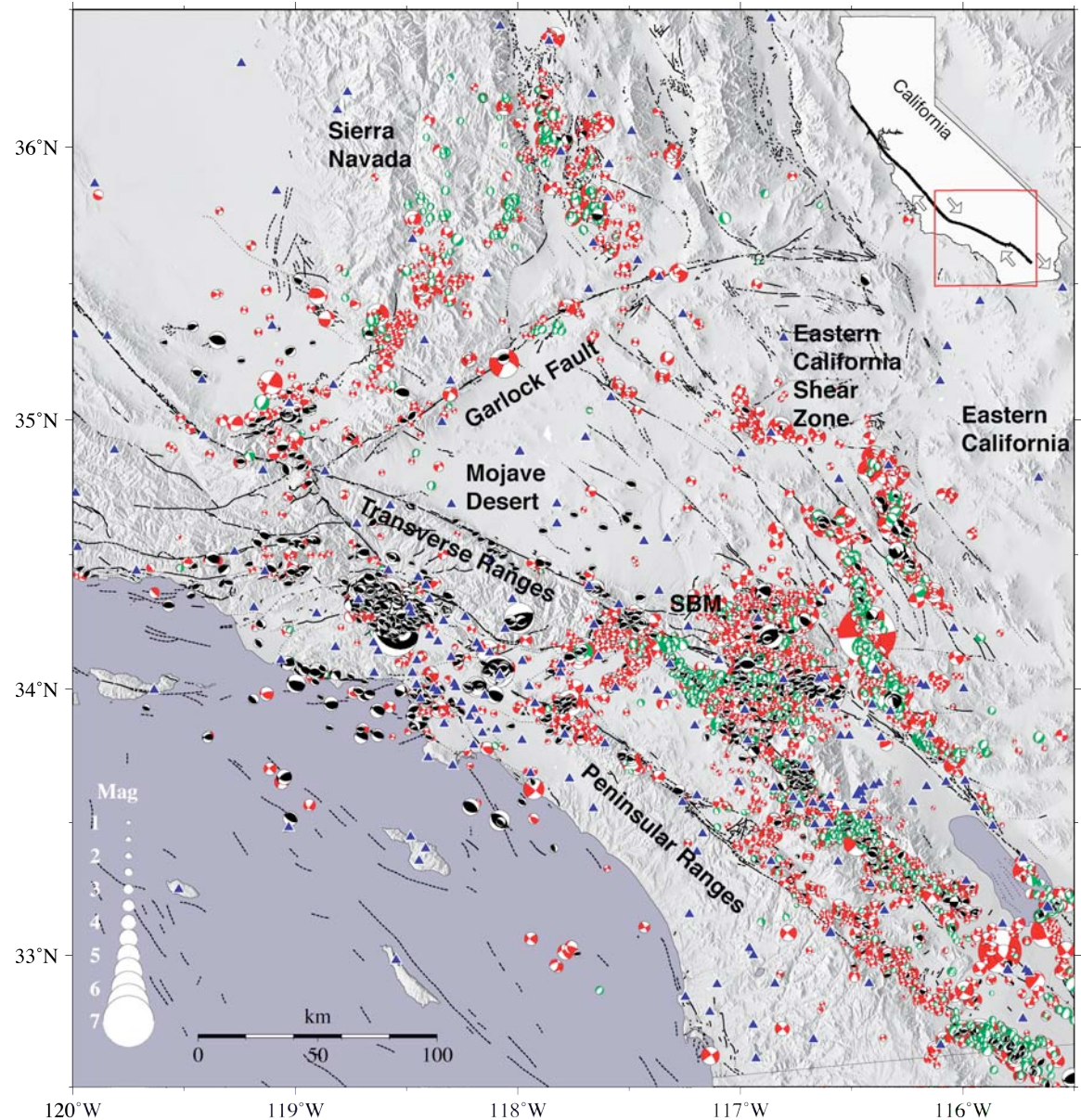
&

Wenzheng Yang, Caltech

Presented at SCEC Workshop in Rancho Mirage, 1 June 2012

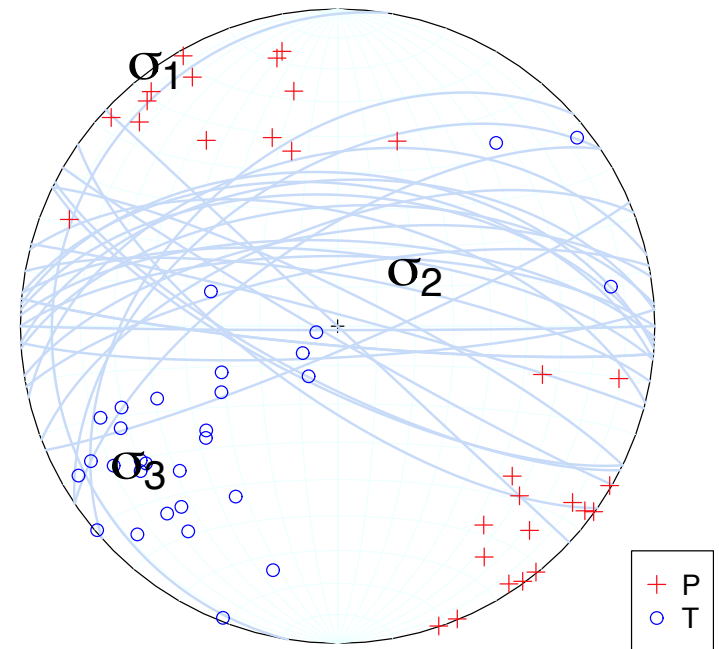
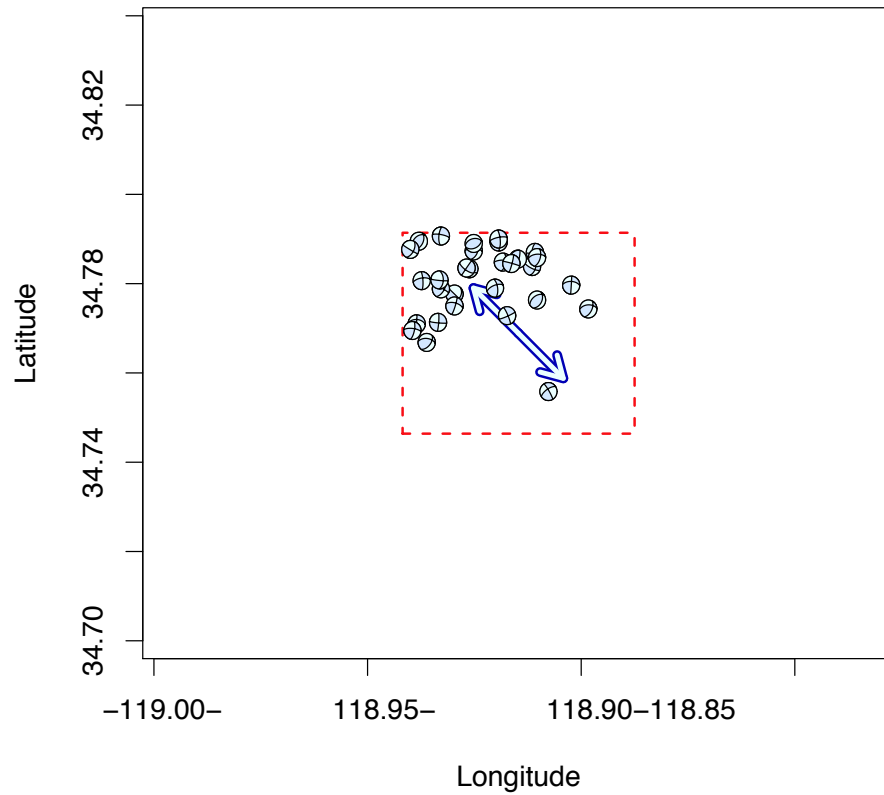
1981-2010 Focal Mechanisms SCSN: 171,000

Red – strike-slip
Green – normal
Black - thrust

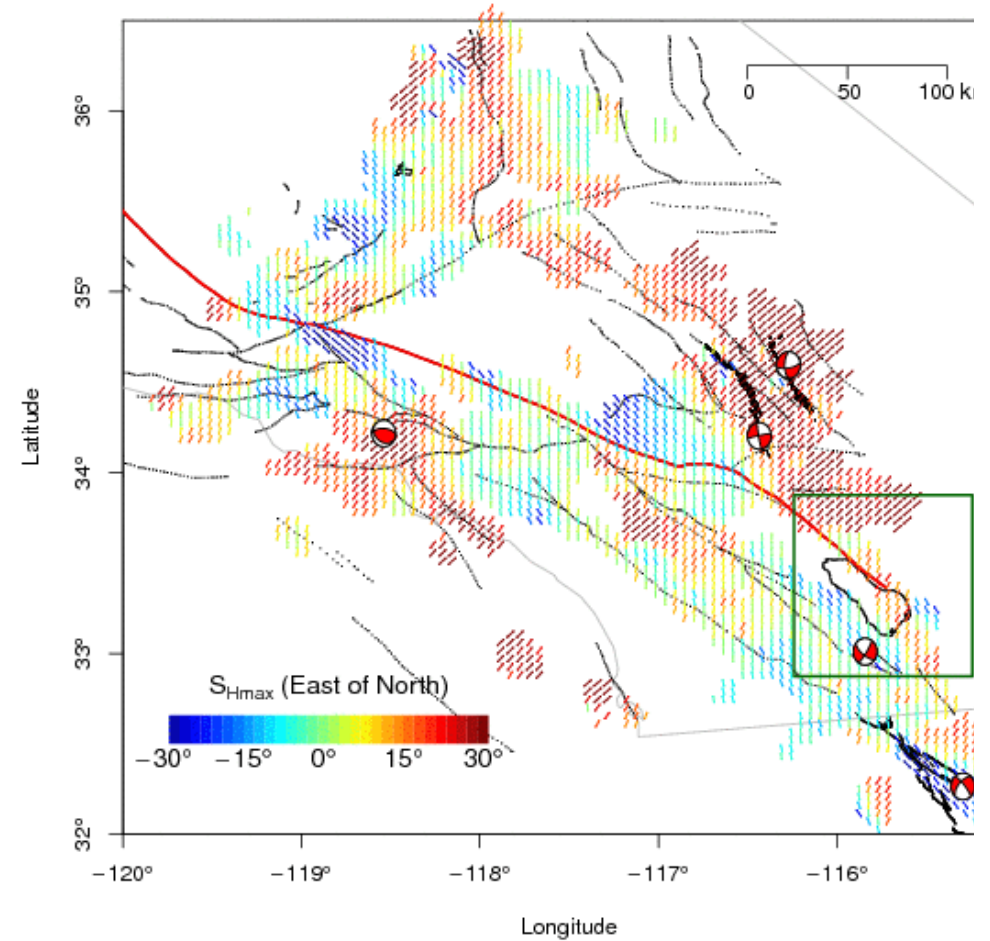
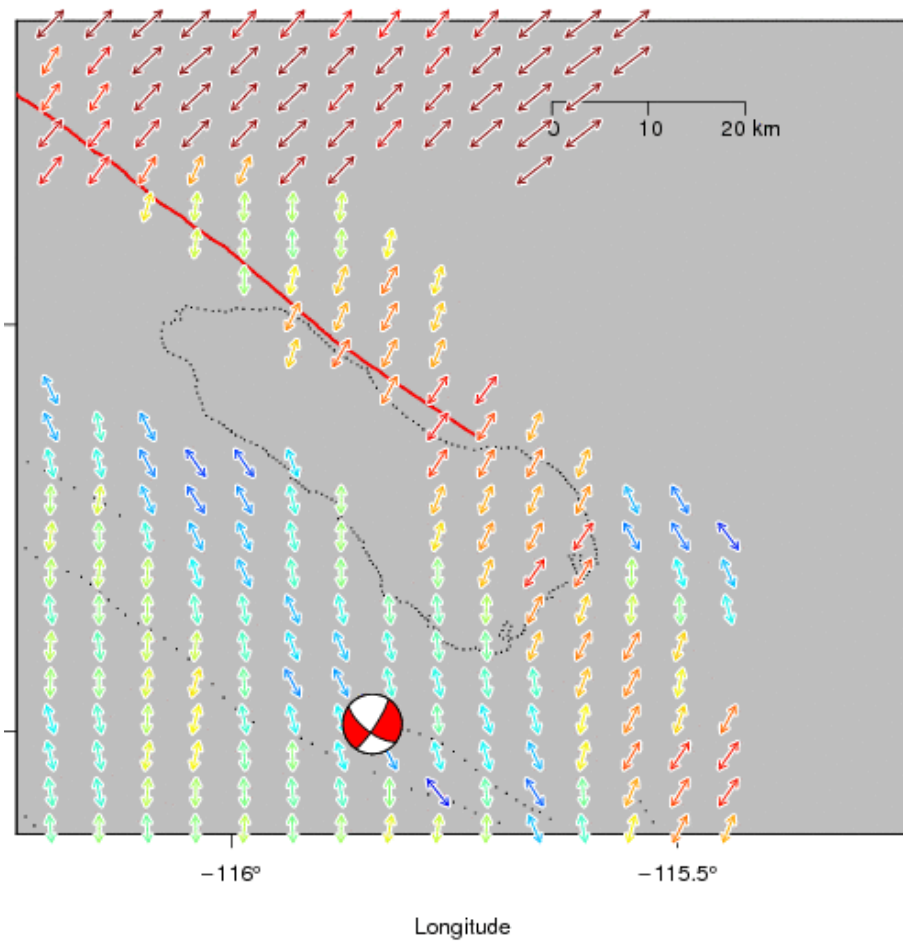


Sample data point for stress inversions

Quality=1 L=5km N=30



Maximum Horizontal Principal Stress

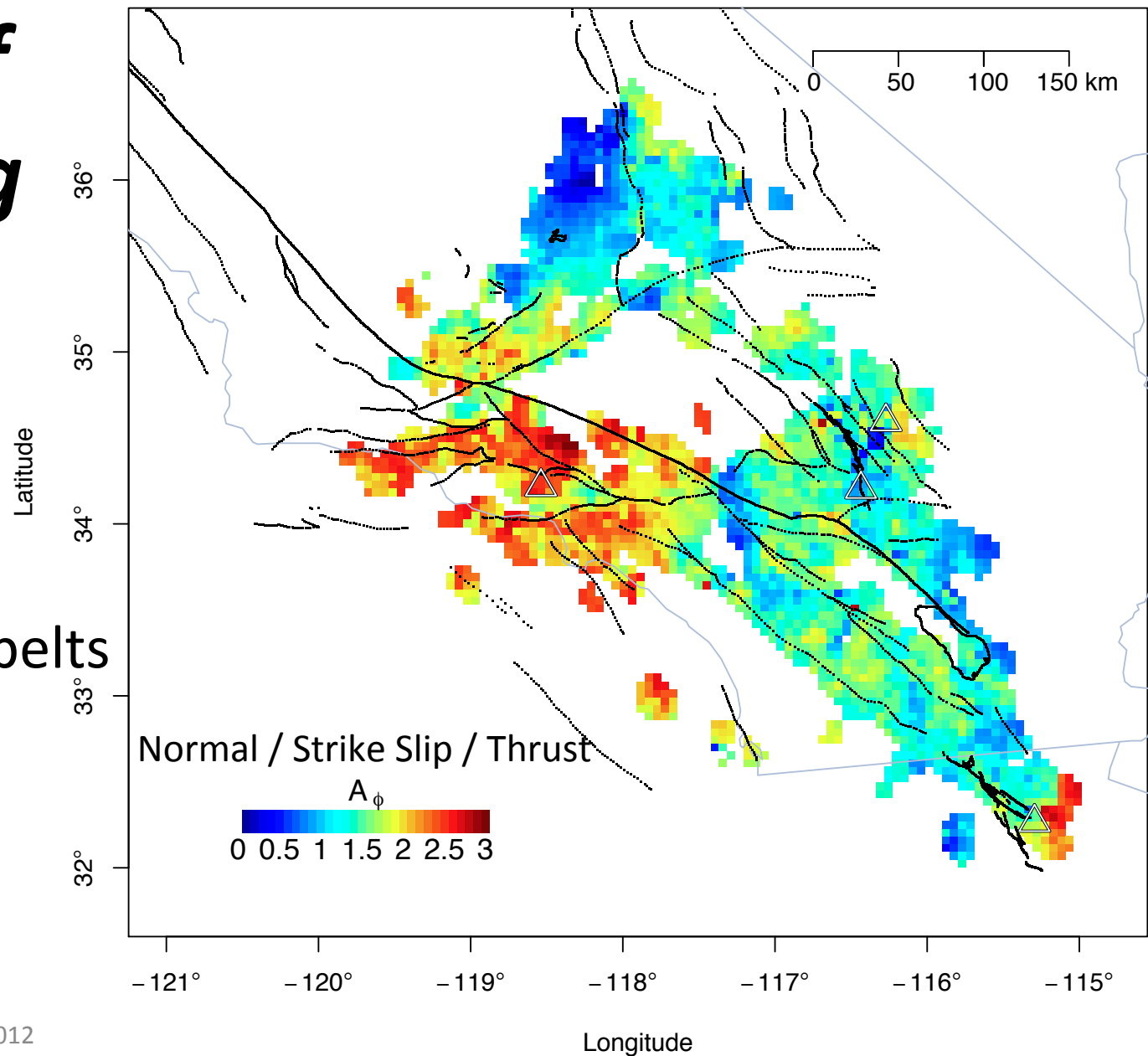


Style of Faulting

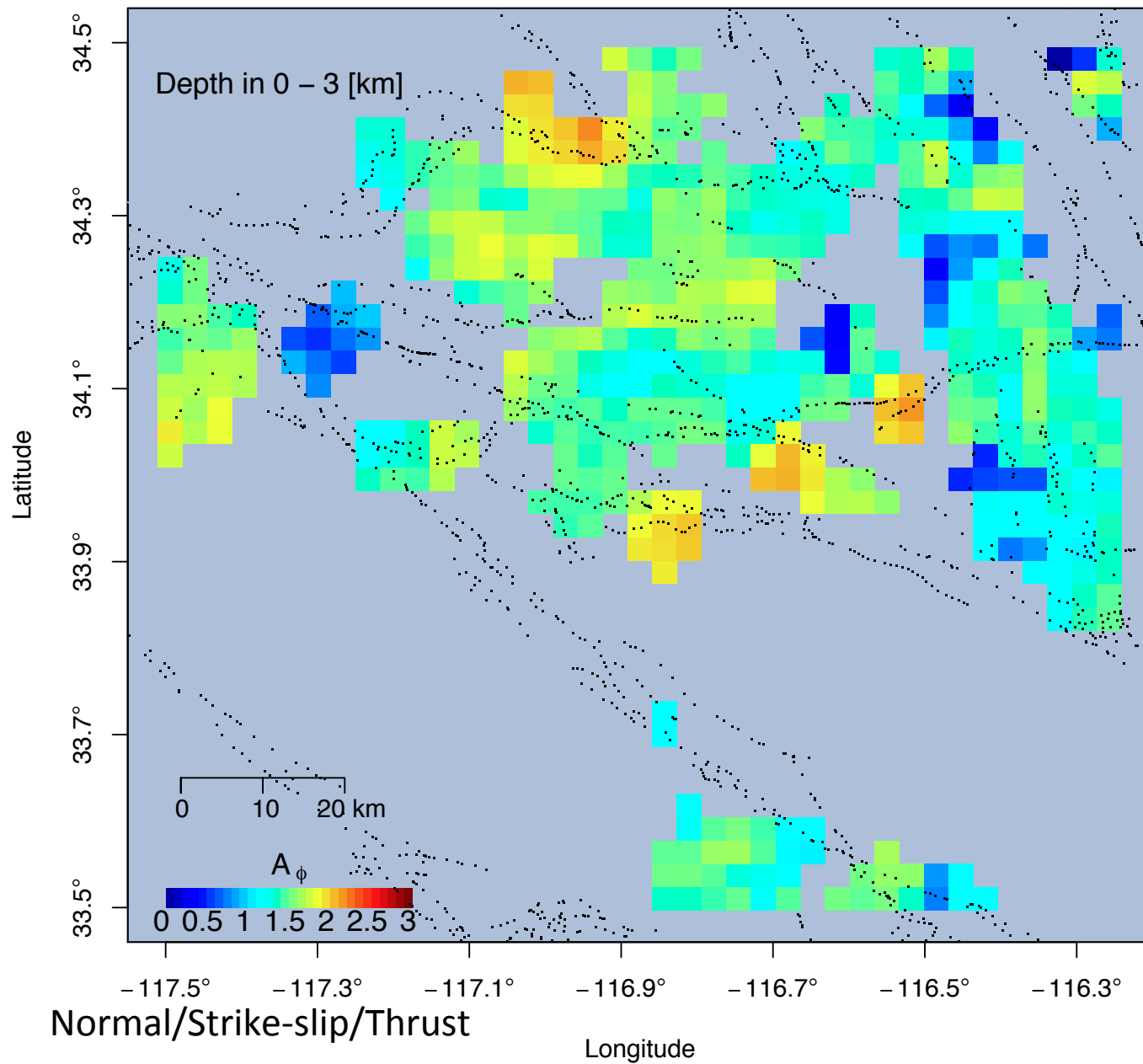
5 km

30 quakes

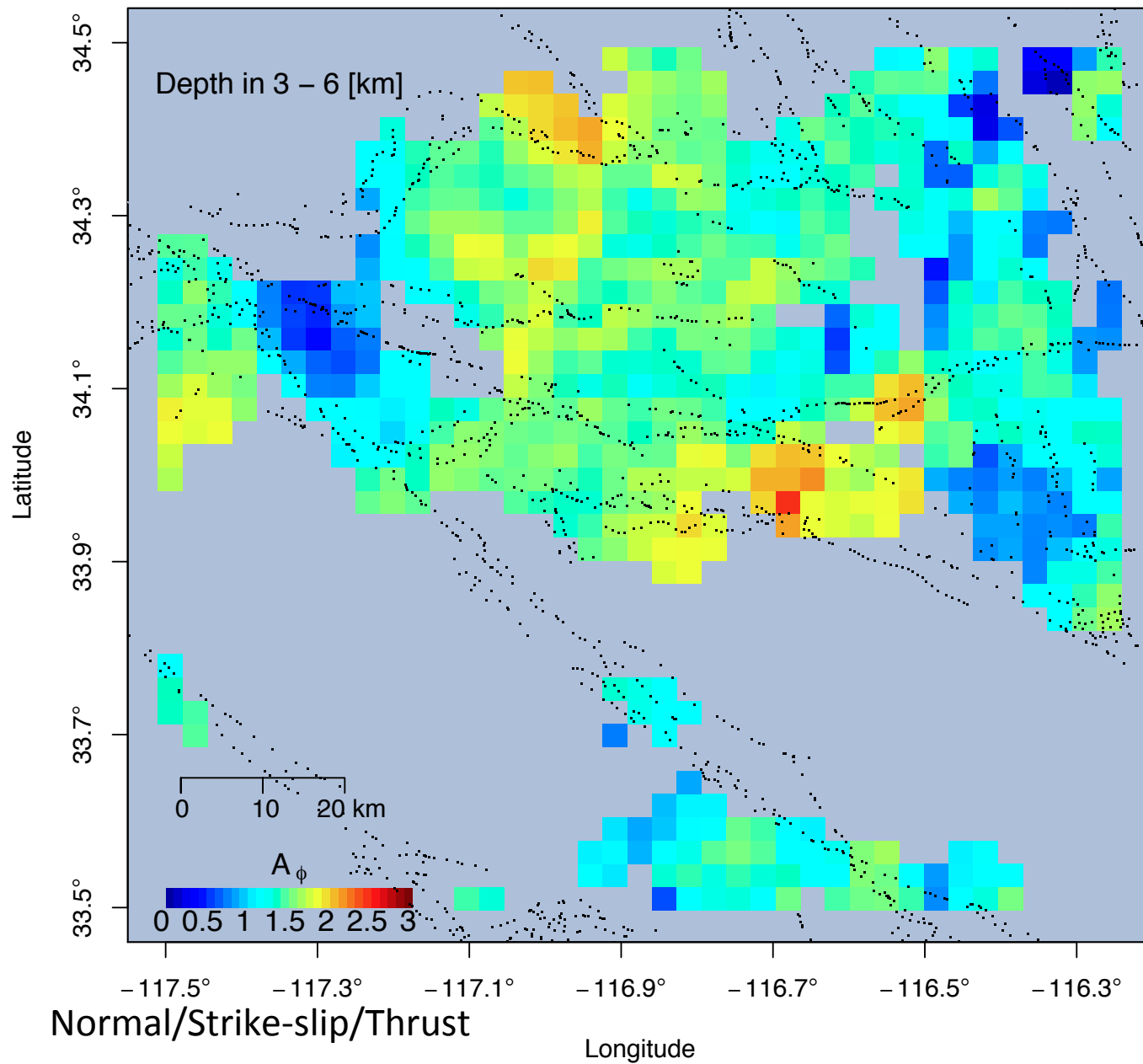
Three thrust belts



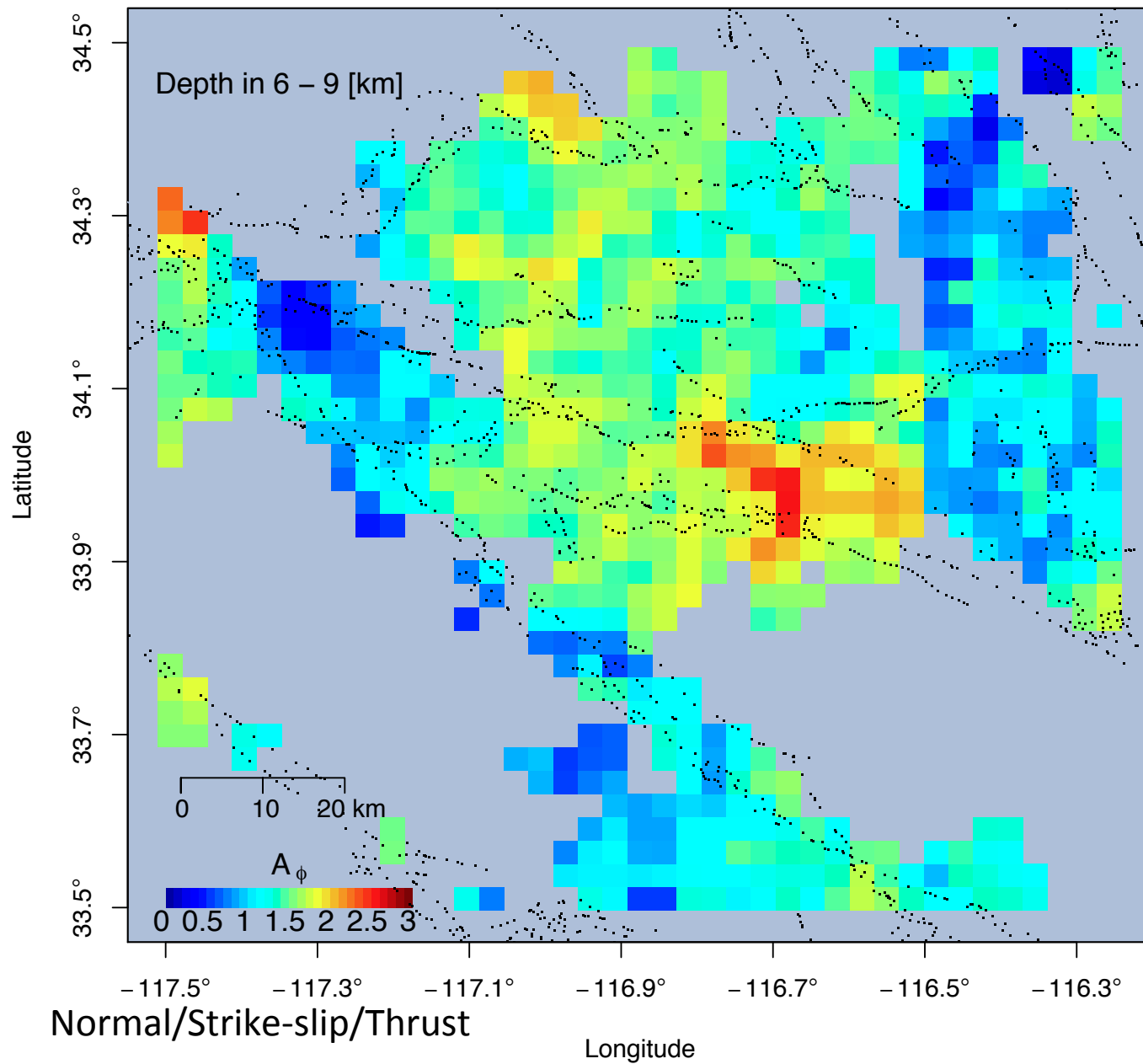
Style of Faulting



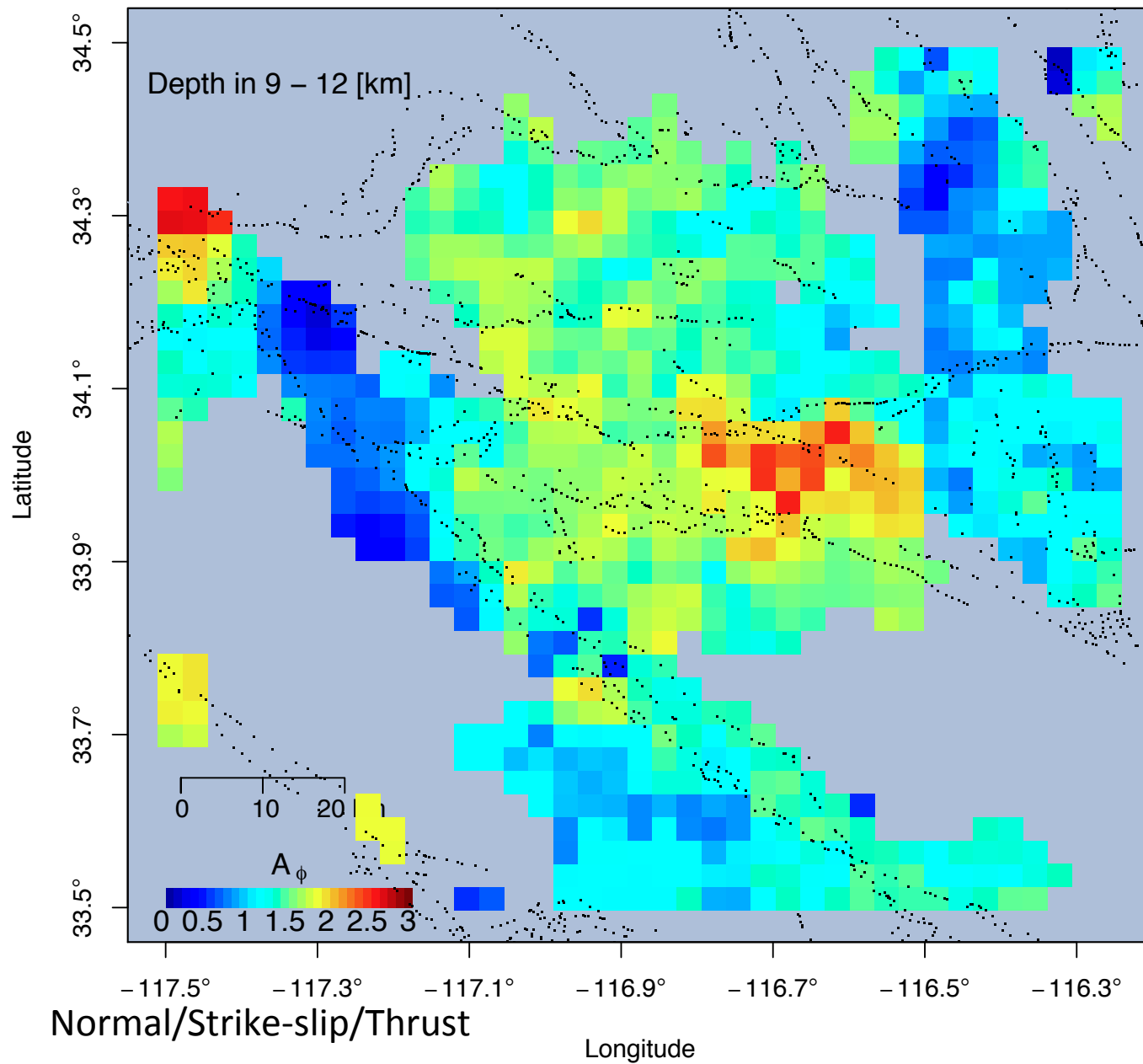
Style of Faulting



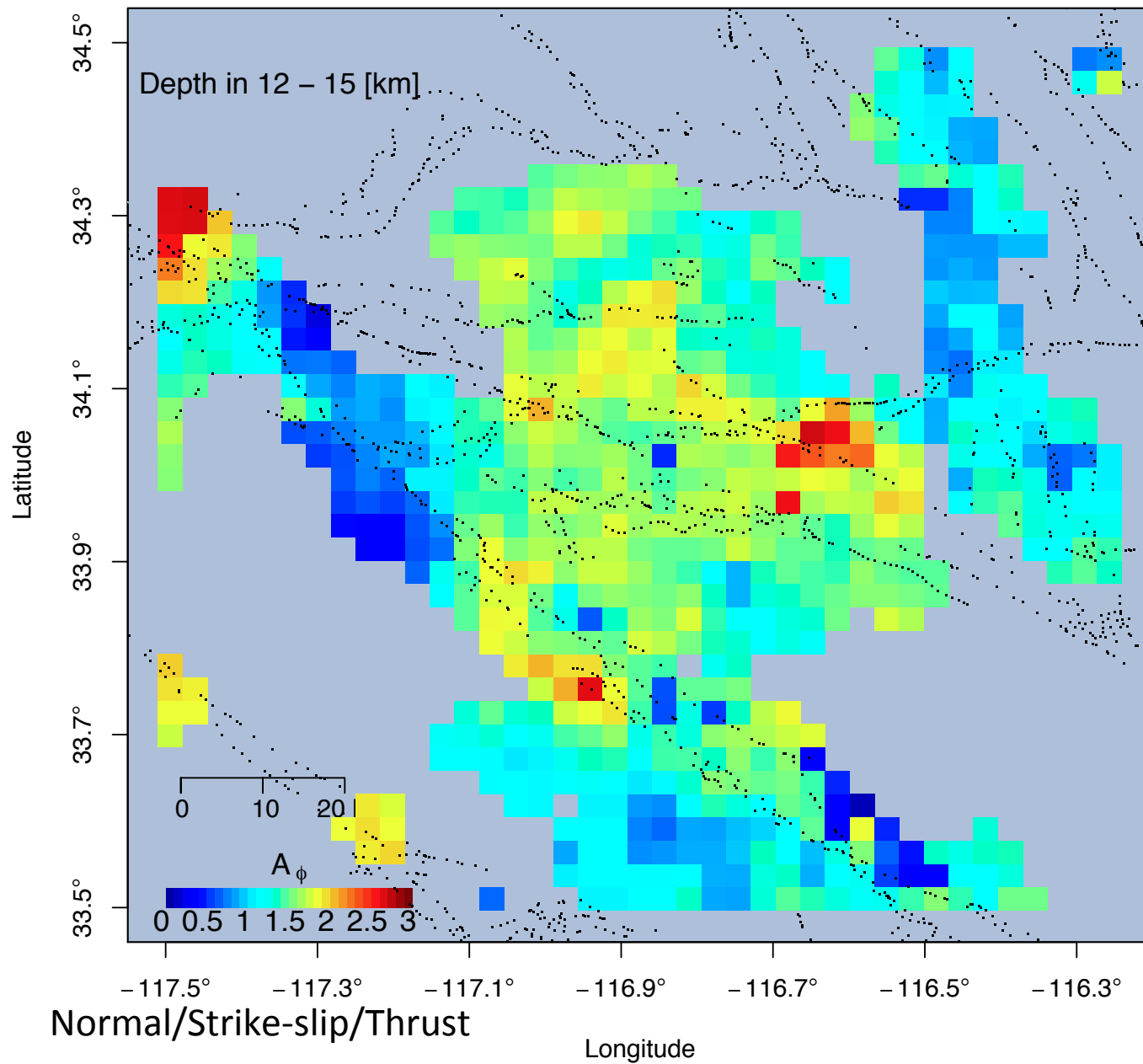
Style of Faulting



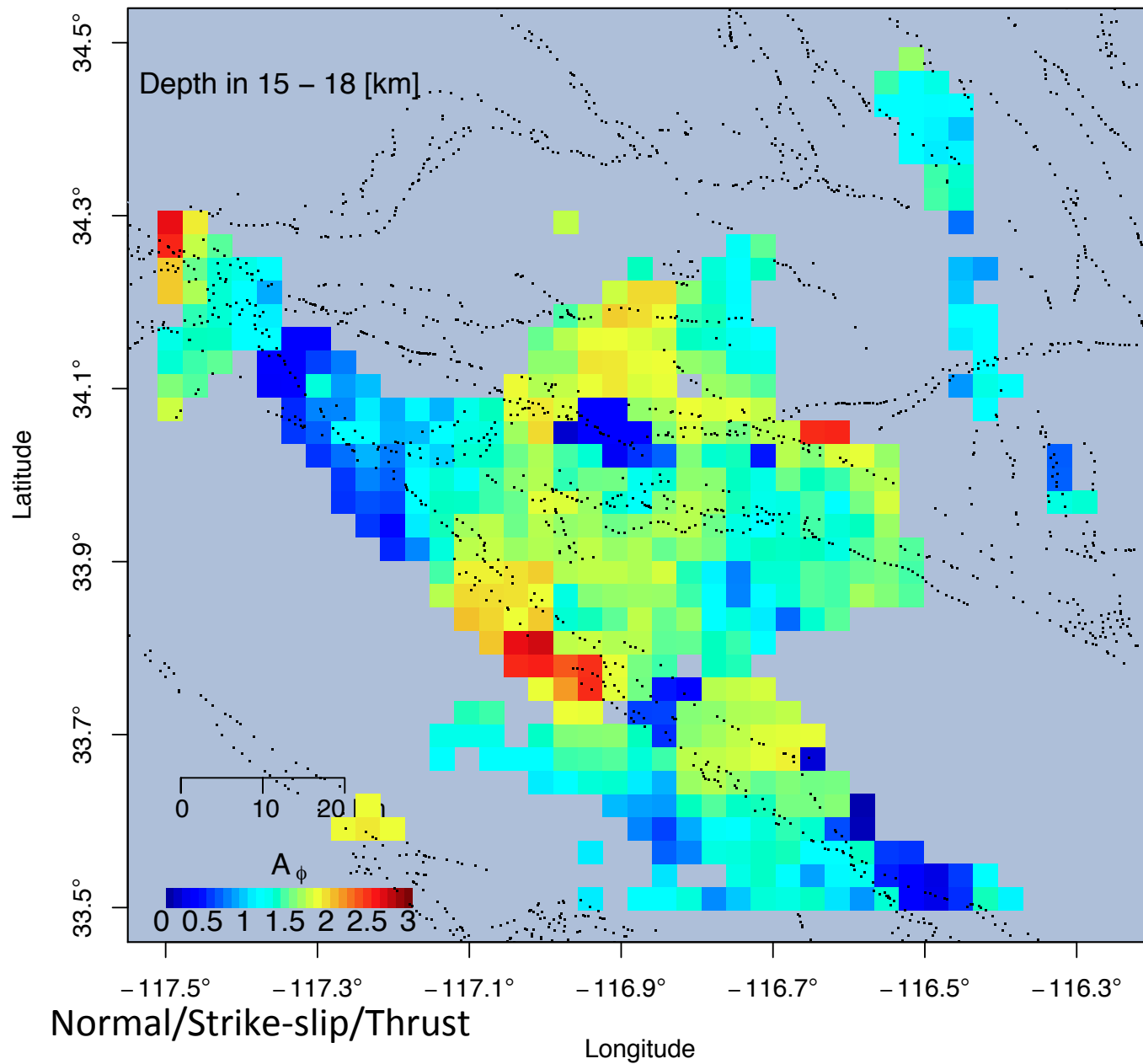
Style of Faulting



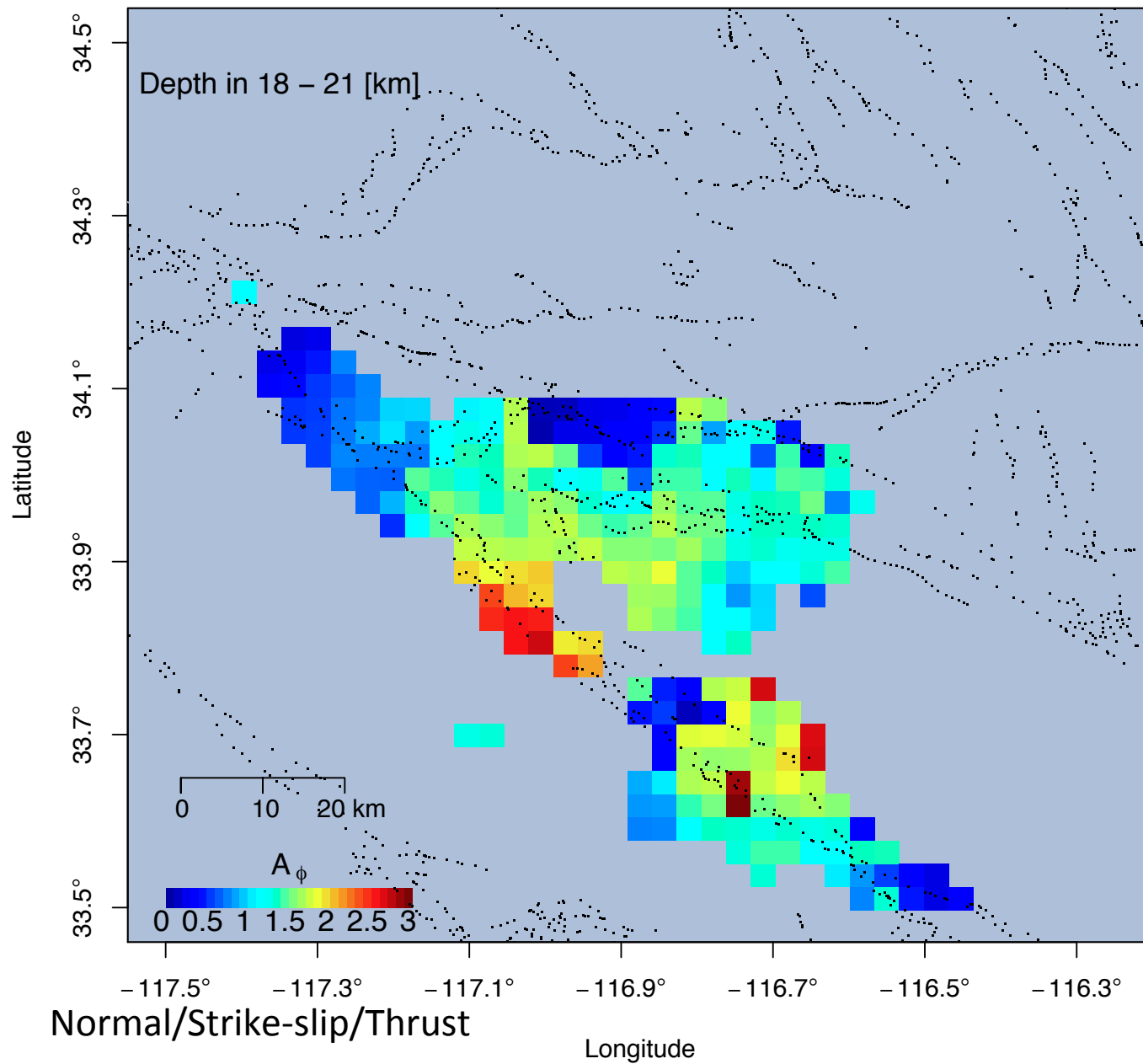
Style of Faulting



Style of Faulting



Style of Faulting



S_{Hmax}

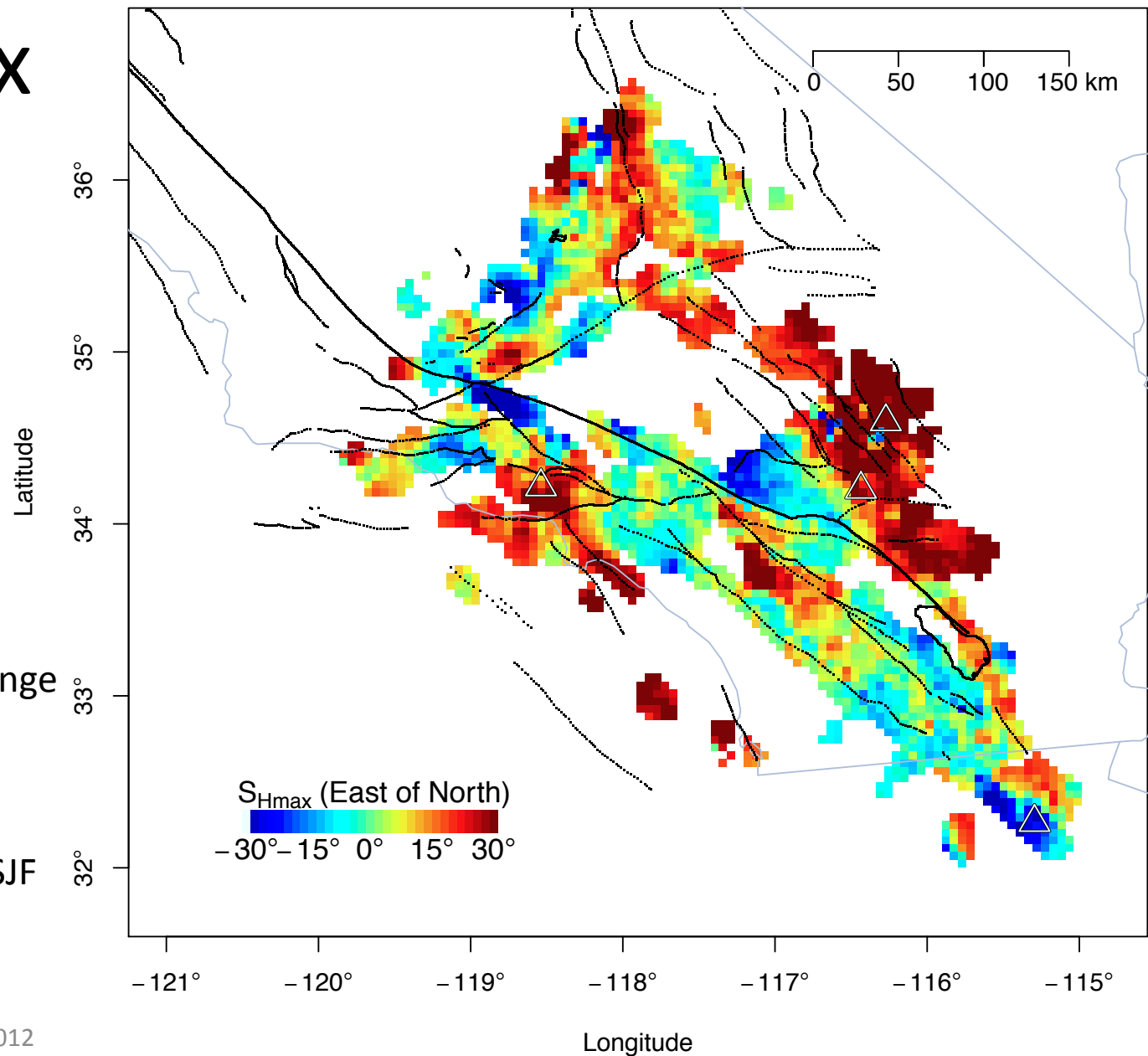
5 km

30 quakes

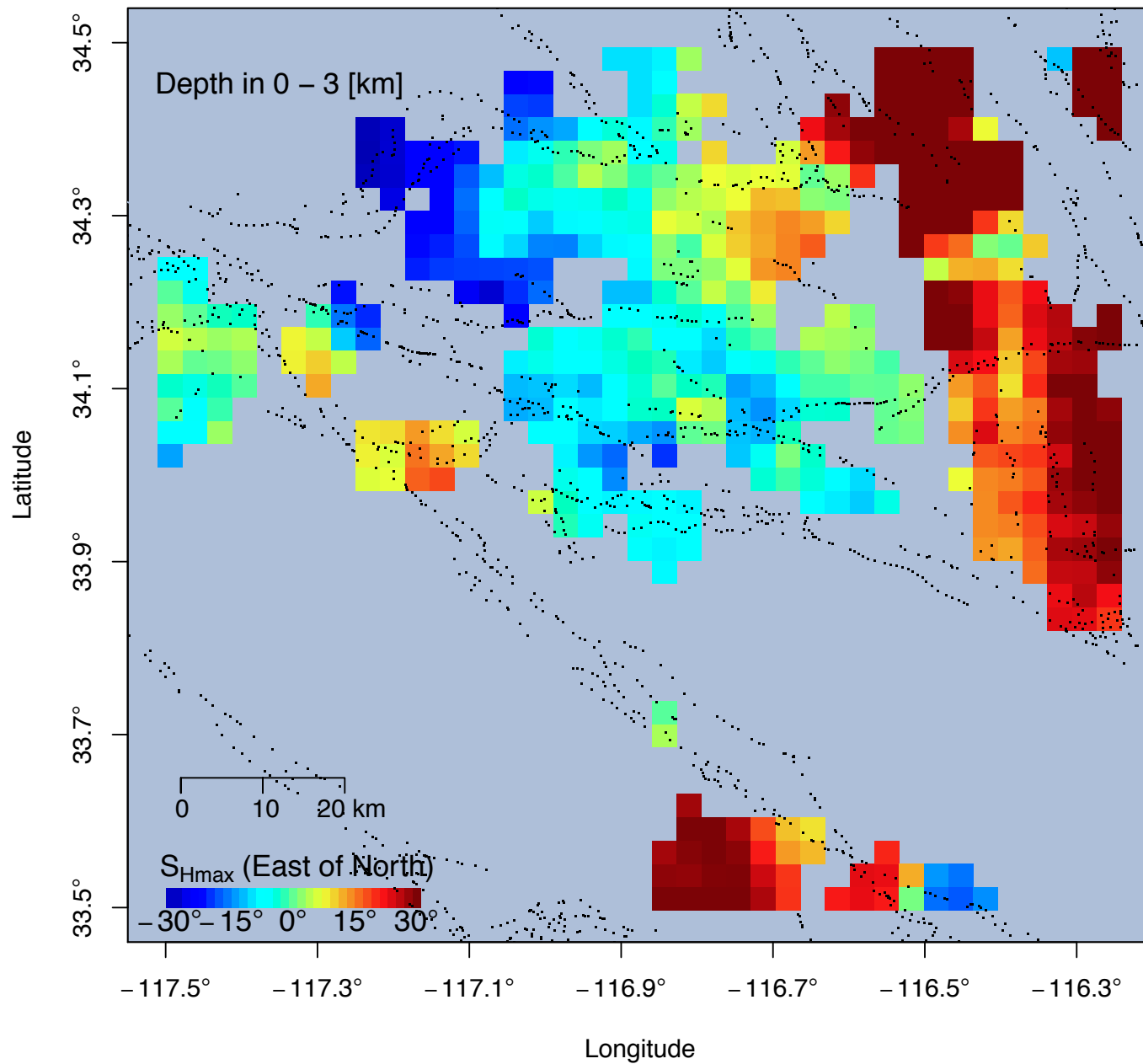
Edge of Basin & Range

NIF – a weak fault

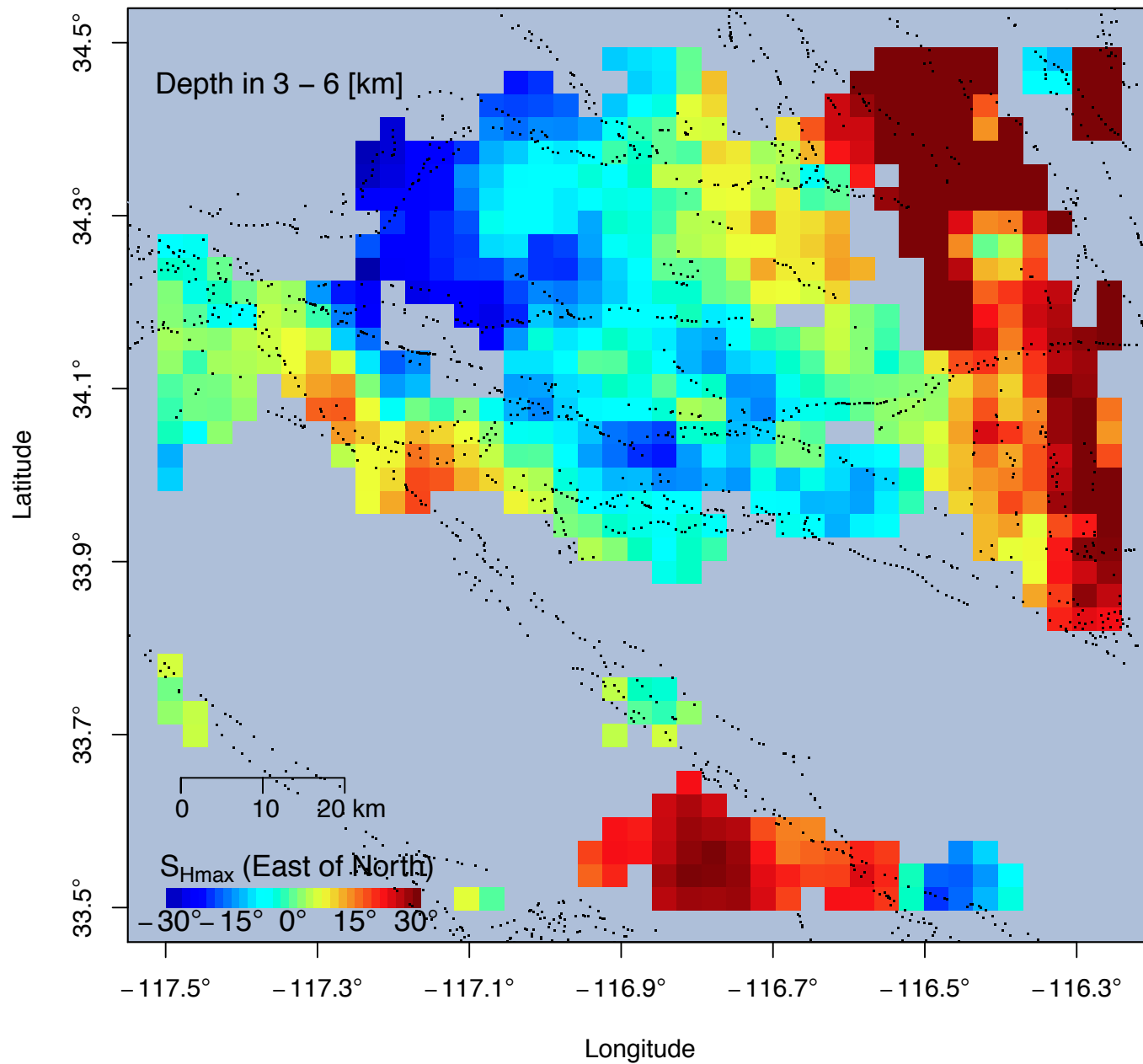
Complexities SAF/SJF



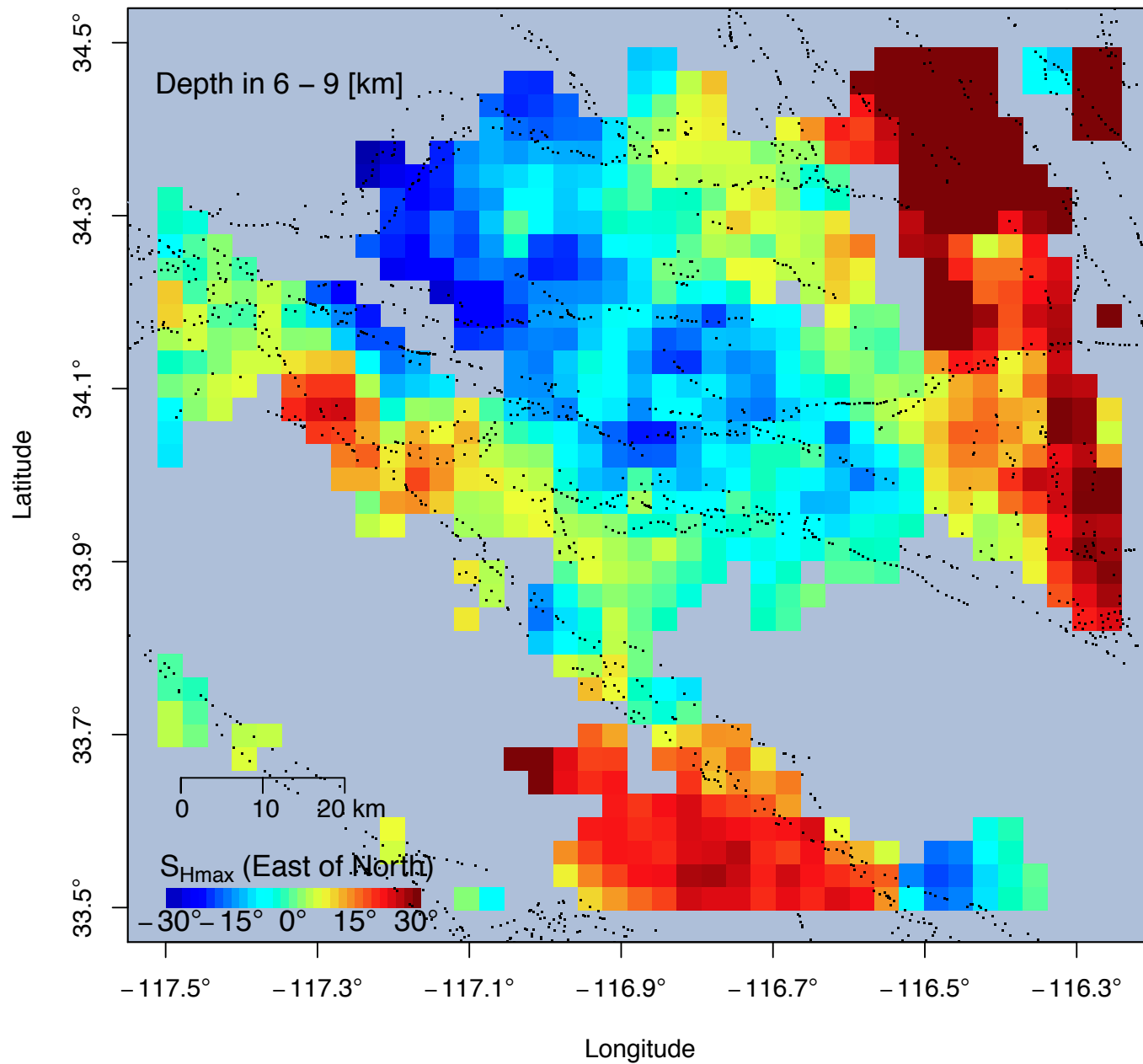
S_{Hmax}



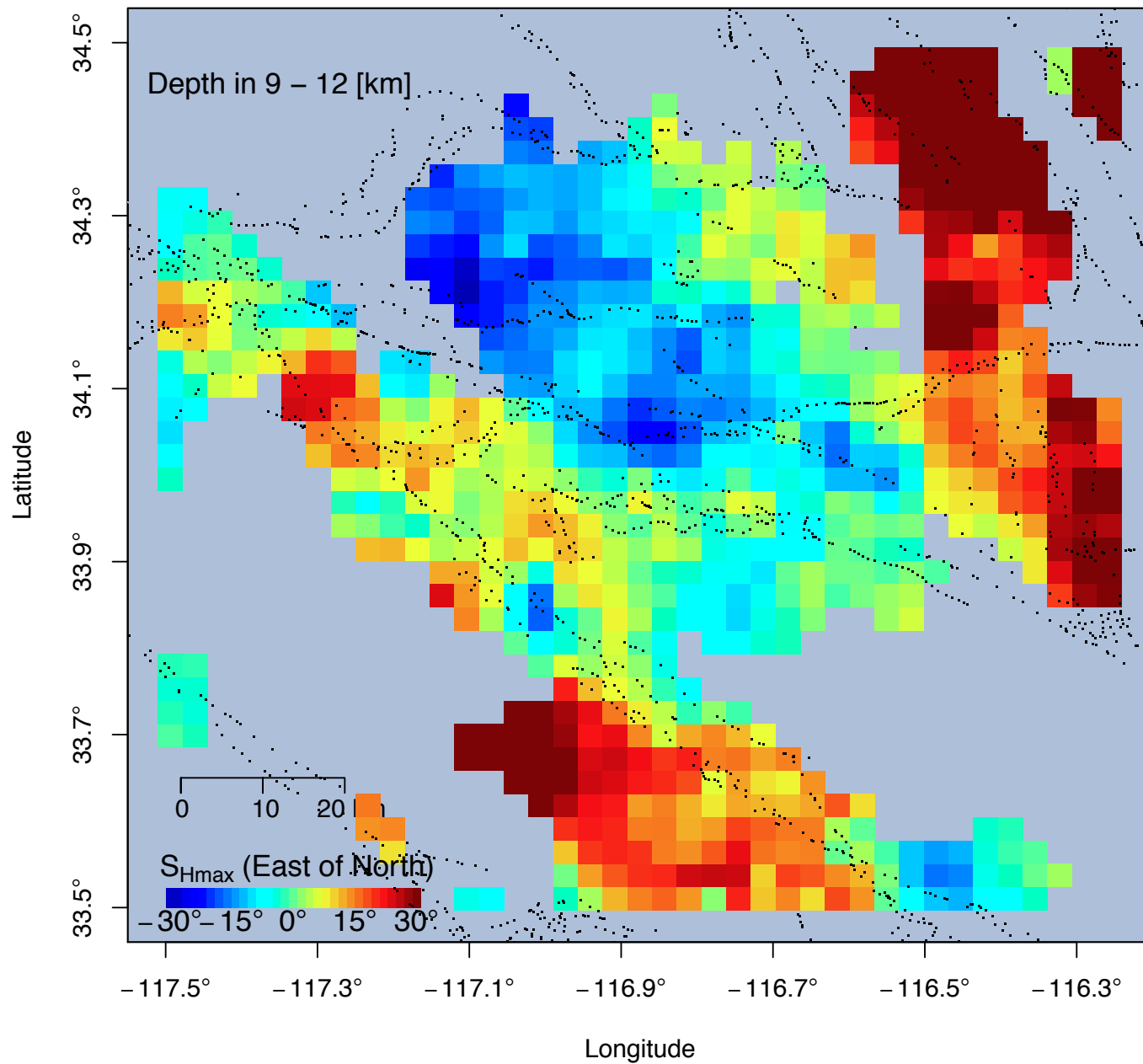
S_{Hmax}



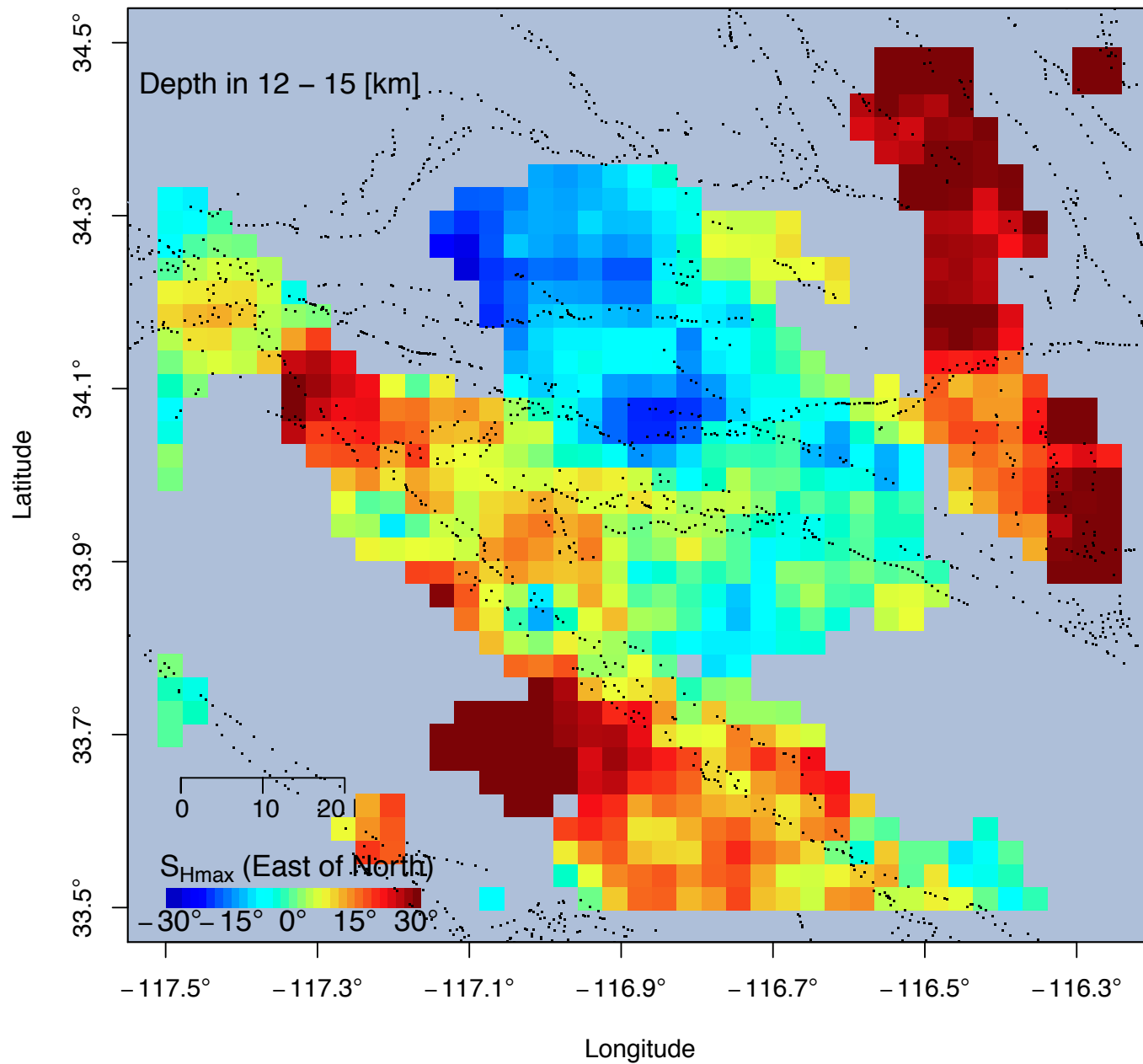
S_{Hmax}



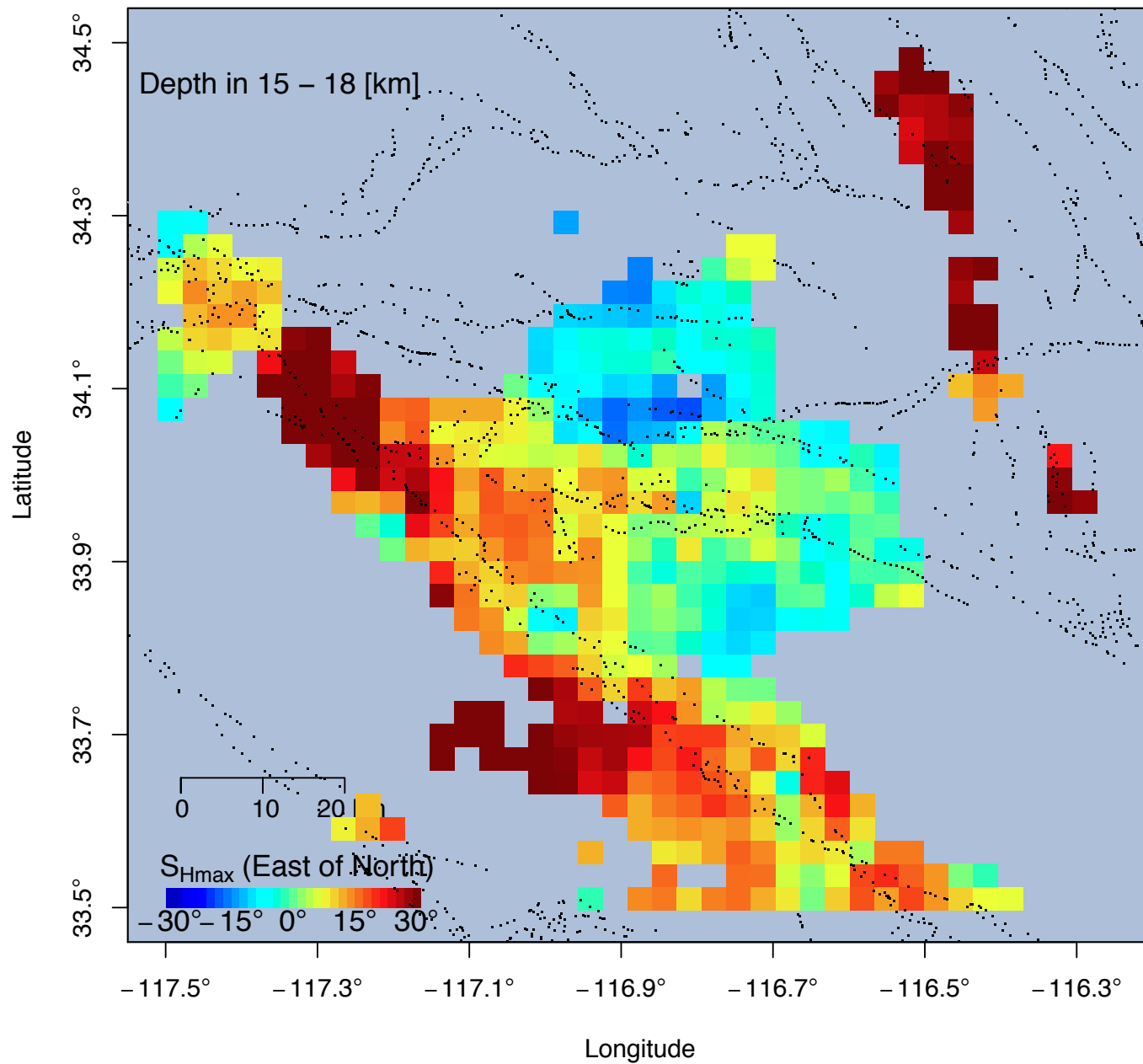
S_{Hmax}



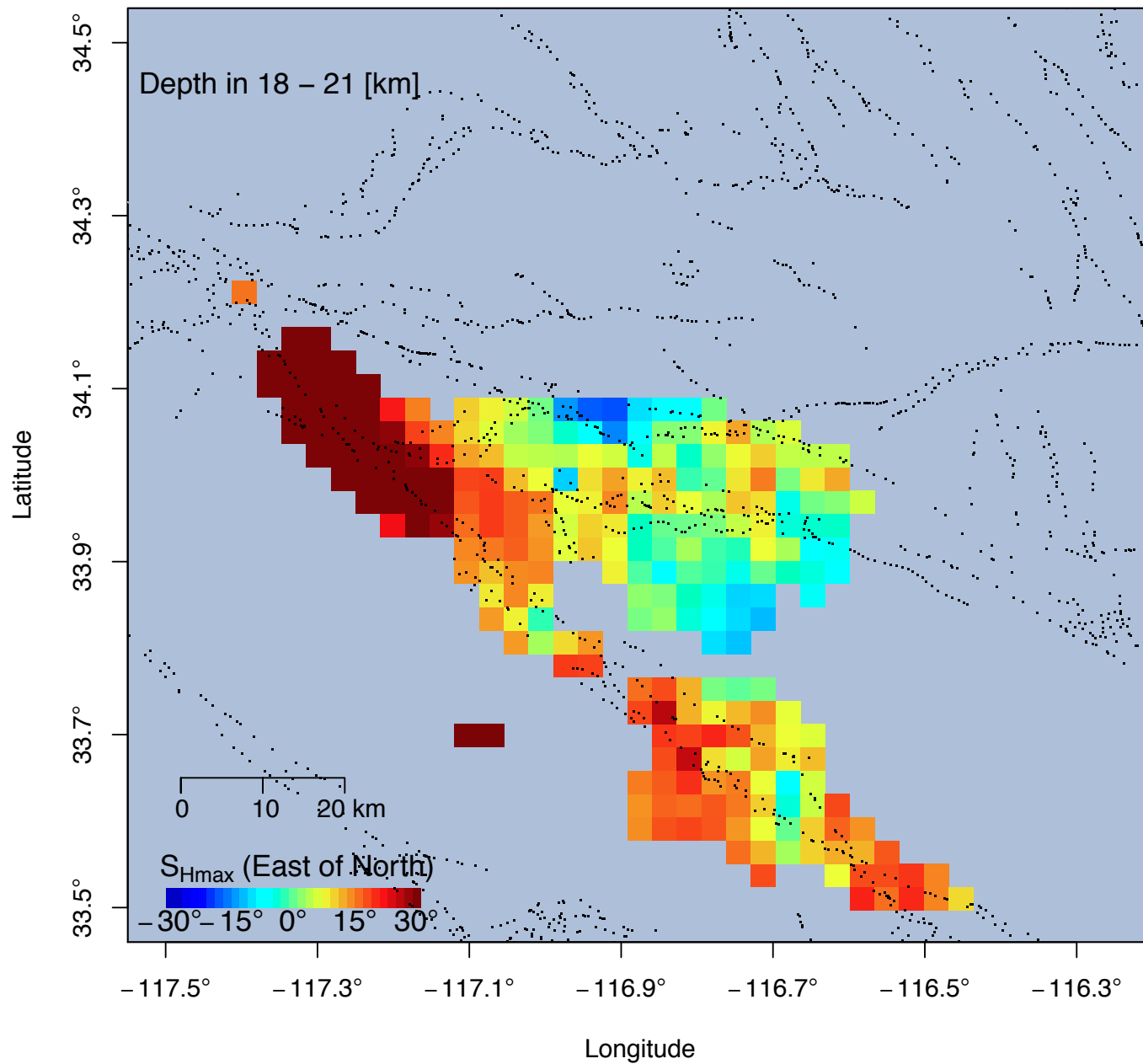
S_{Hmax}



S_Hmax



S_{Hmax}



Conclusions

Both style of faulting and S_{hmax} vary across the region and with depth

Strength of faults vary with depth

West edge of ECSZ close to Coachella segment of SAF