

Theme: Flooding

# Imaging interseismic motion on the San Andreas fault with spaceborne radar

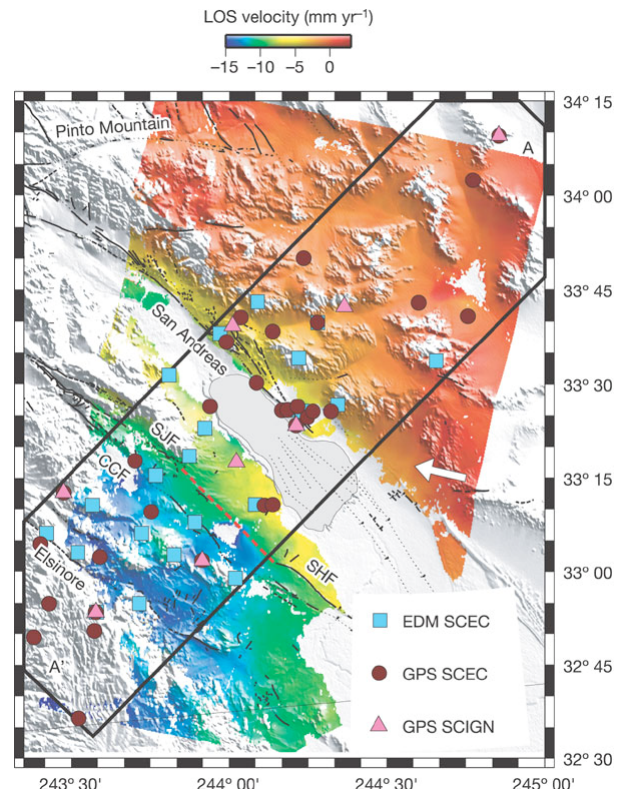
## Objective

A key to understanding earthquake hazard is the measurement of associated surface deformation in the interseismic period between earthquakes. However, these signals are usually small (mm's/year). Satellite radar interferometry provides a means to detect these subtle signals through the analysis of multiple acquisitions in time. This works well when the movement is predominately eastwest, as a significant proportion of the motion maps into the look direction of the satellite. When displacement is mostly north-south, however, it is virtually invisible using normal techniques.

By splitting the Doppler spectrum into two, it is possible to detect movement in the azimuthal direction, and by analysing many acquisitions simultaneously, noise levels can be reduced to reveal small motions.

## Objective

The goal of this project will be to develop this technique and use it to extract interseismic motion associated with north-south sections of the San Andreas fault in California.



Interseismic strain (Fialko, Y., *Nature*, 441, 2006).

## Obligatory committee members:

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