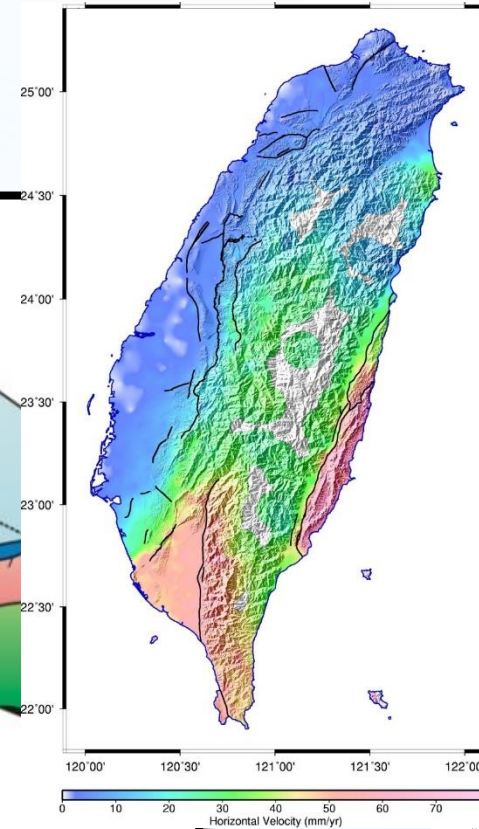
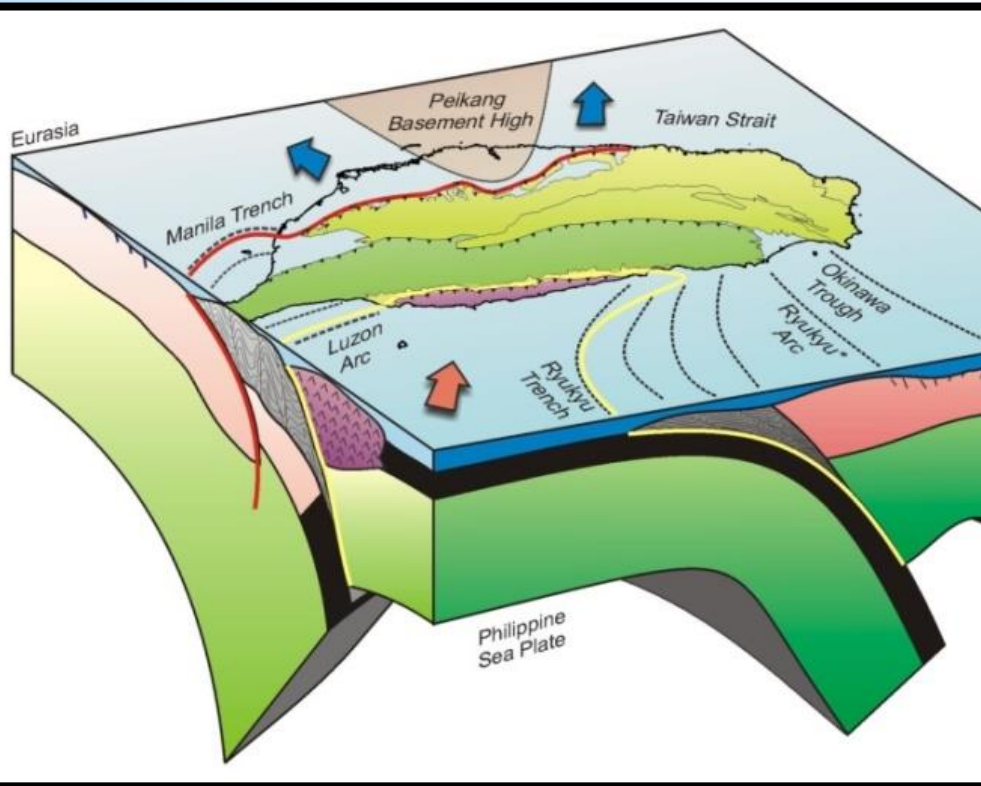
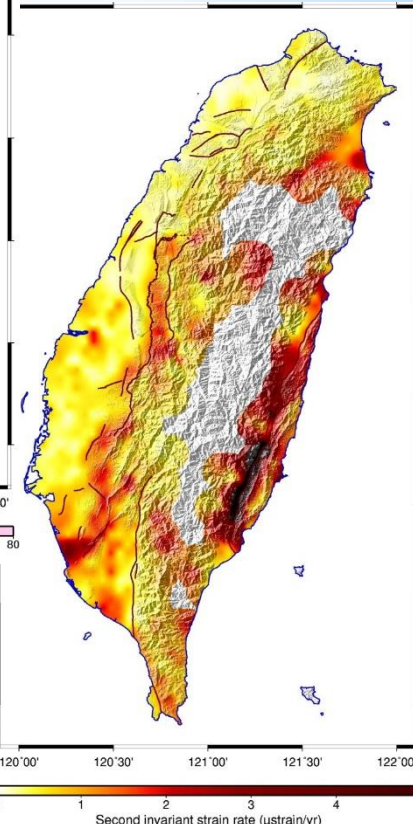


# Introduction to Construction of Taiwan Horizontal Semi-Dynamic Datum

High convergence rate between two plates

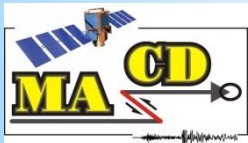


Horizontal Velocities

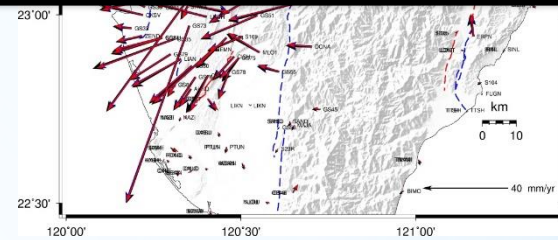
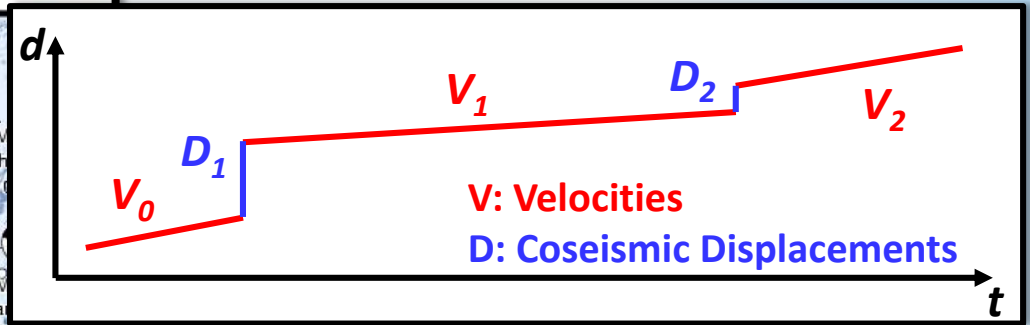
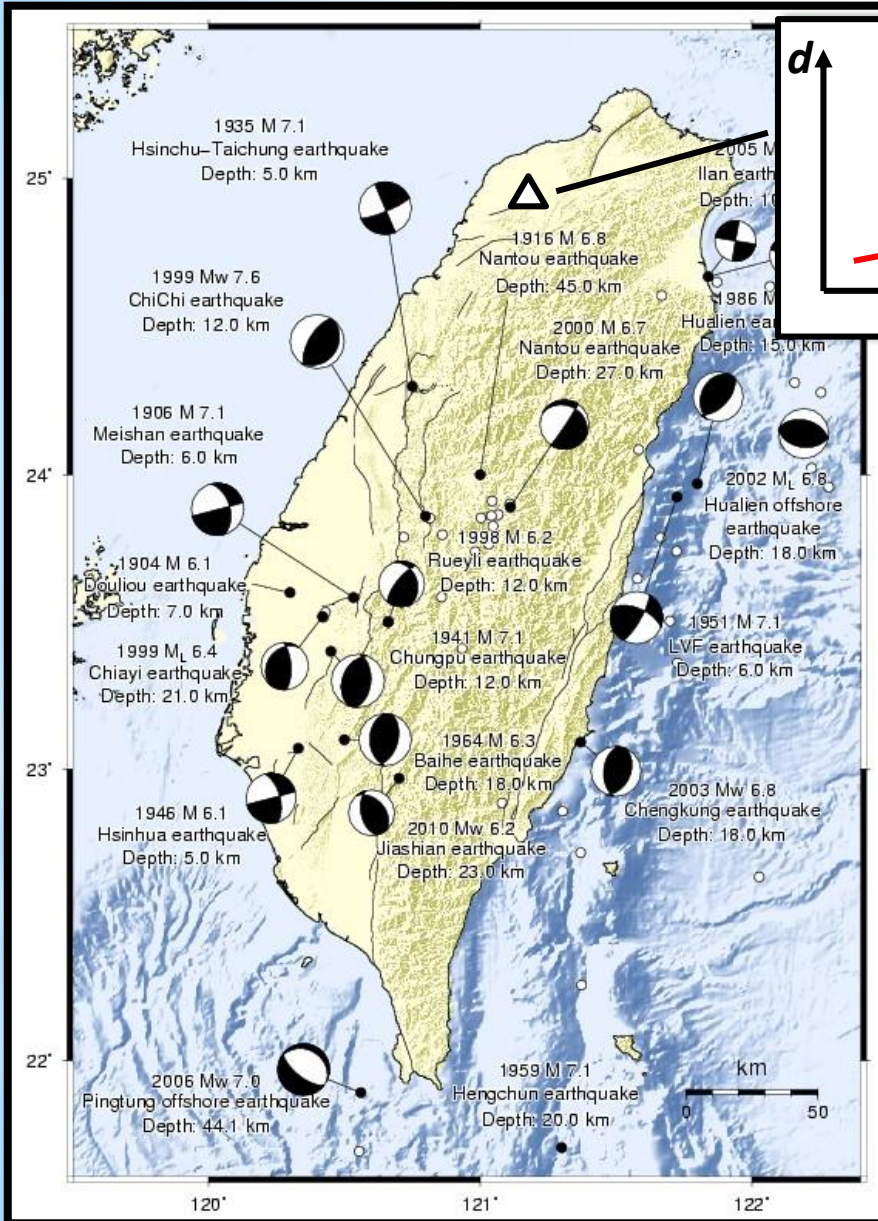


Strain Rates

High strain rates (relative velocity difference) in Taiwan



# Occurrence of $M \geq 6$ Earthquakes

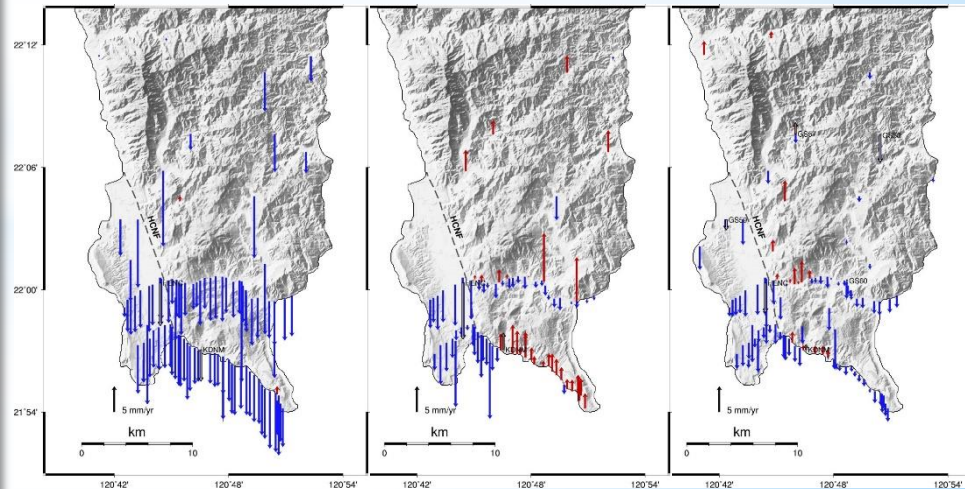


**Velocity changes with time.**

**2002 – 2006**

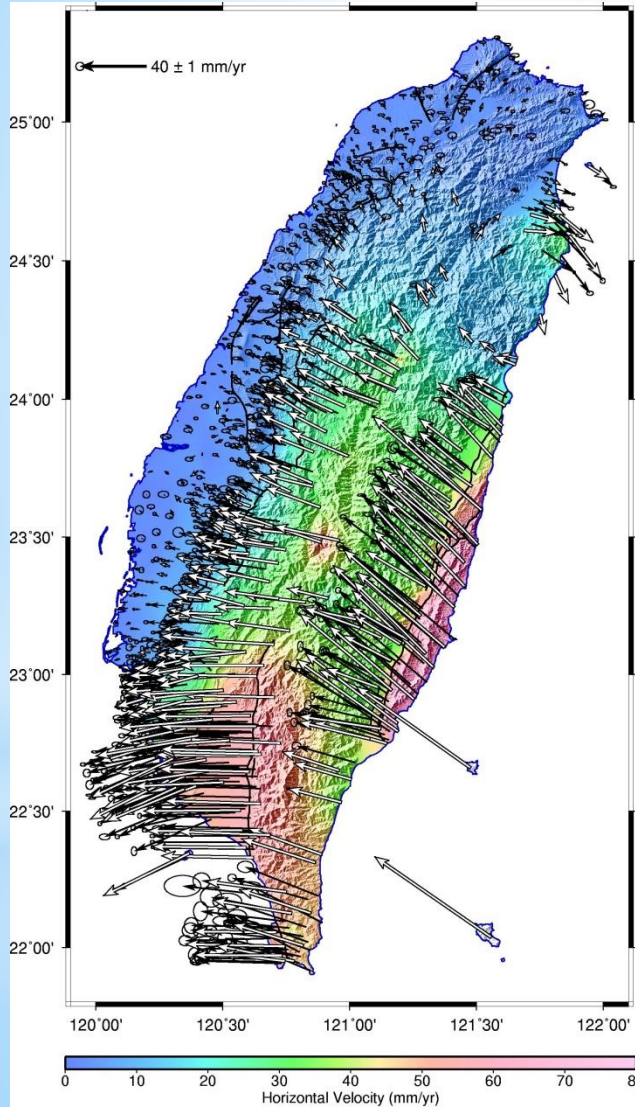
**2007 – 2010**

**2010 – 2014**

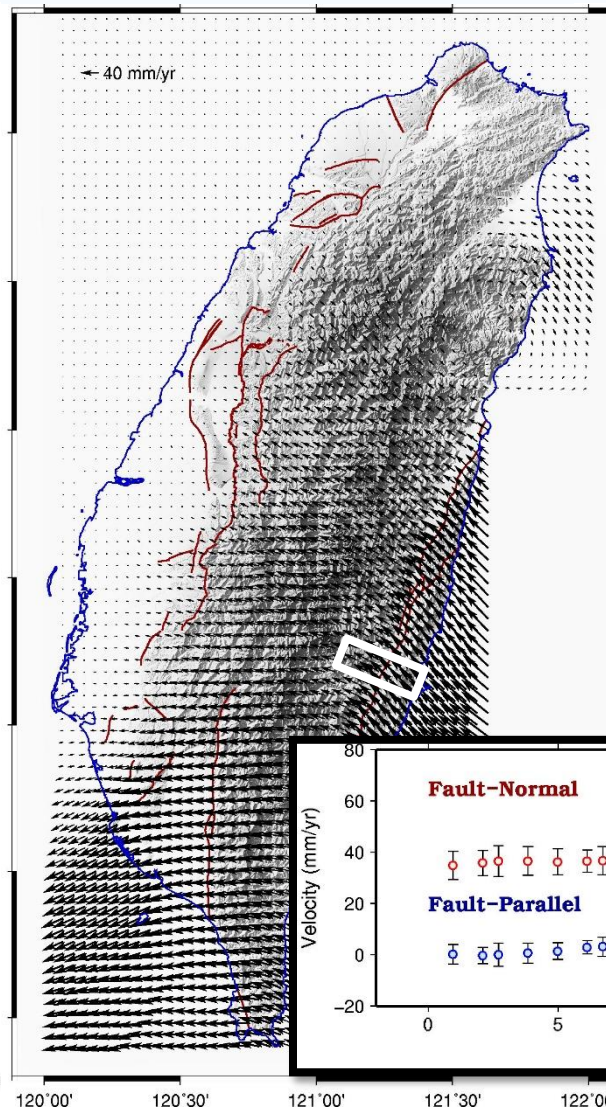


# Velocity Model (2002-2016; Relative to KMMN)

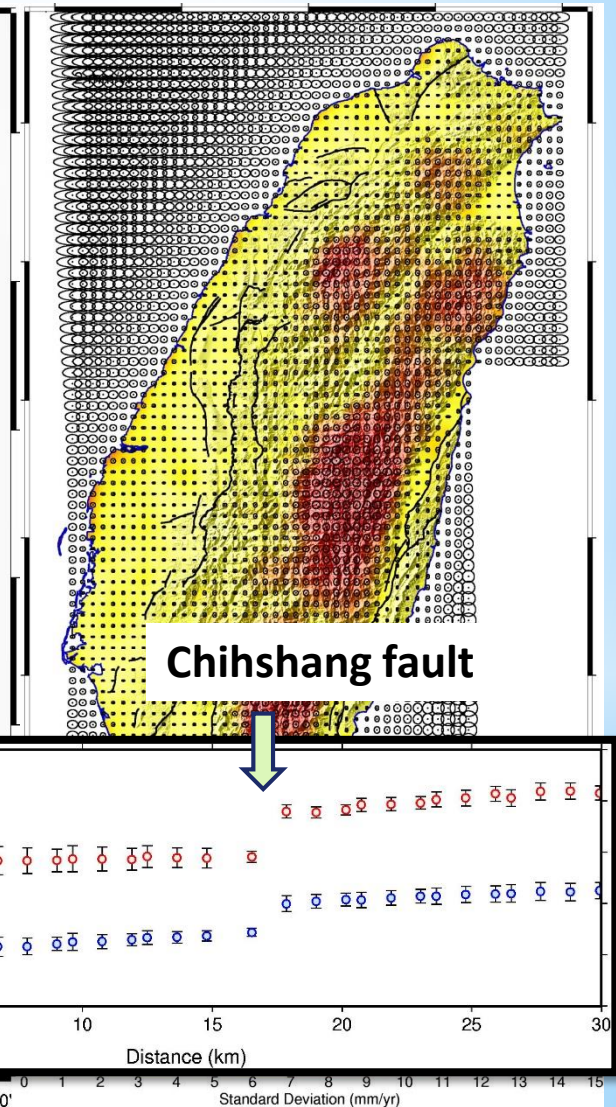
Original Velocity



Velocity Model



Uncertainty



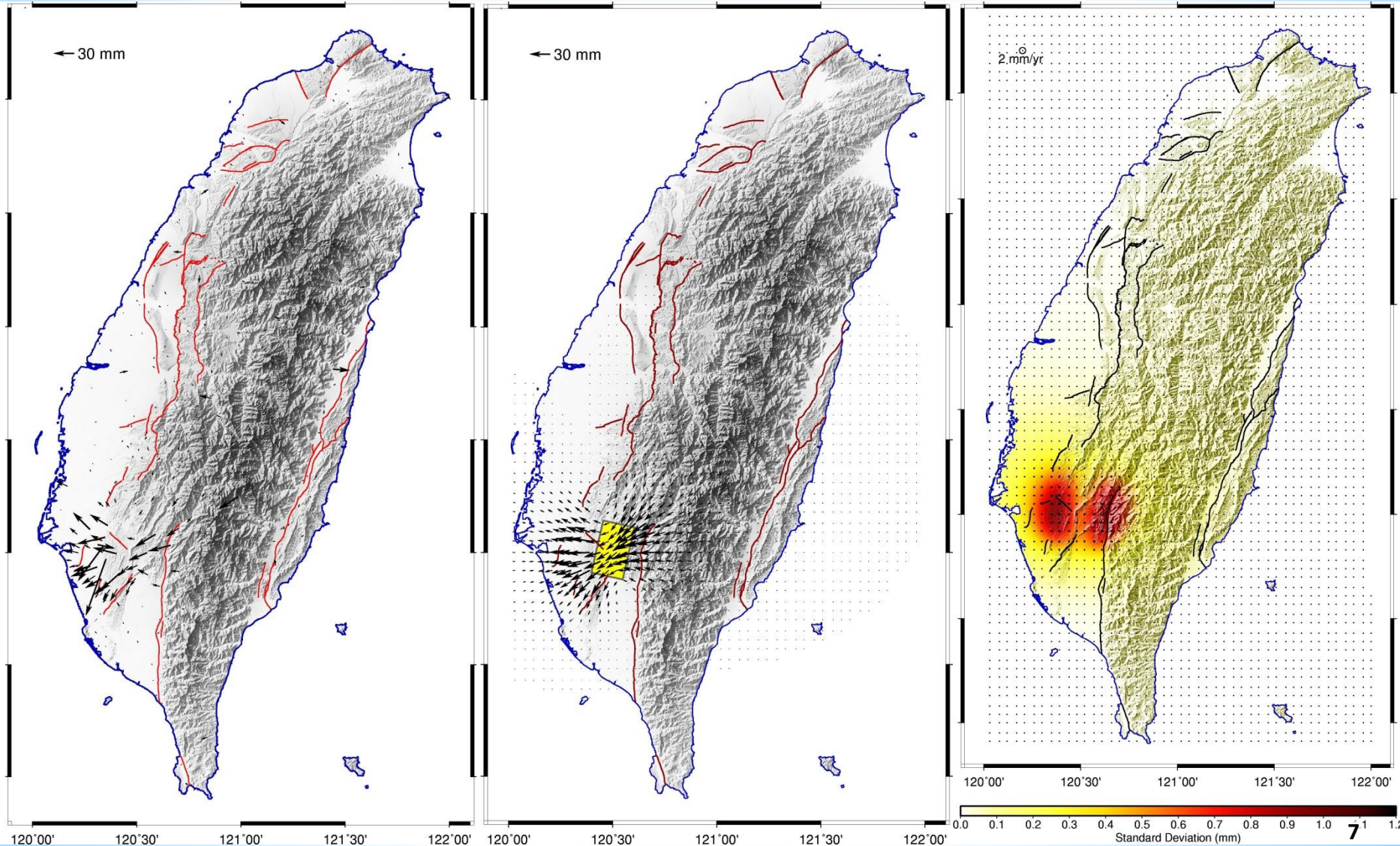
# Coseismic Displacement Model

(2016 Meinong earthquake)

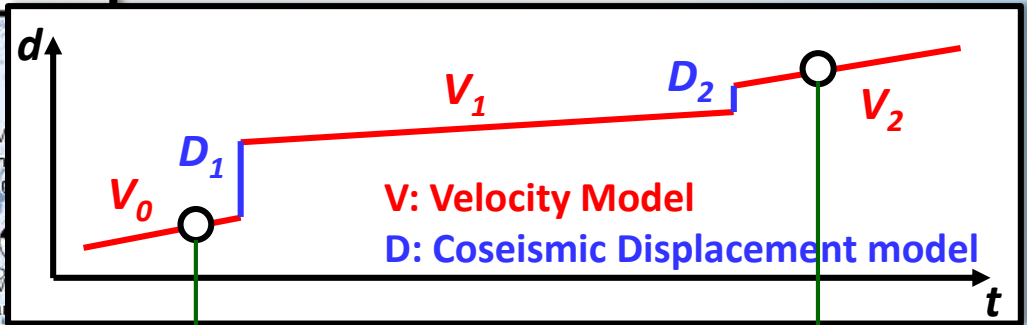
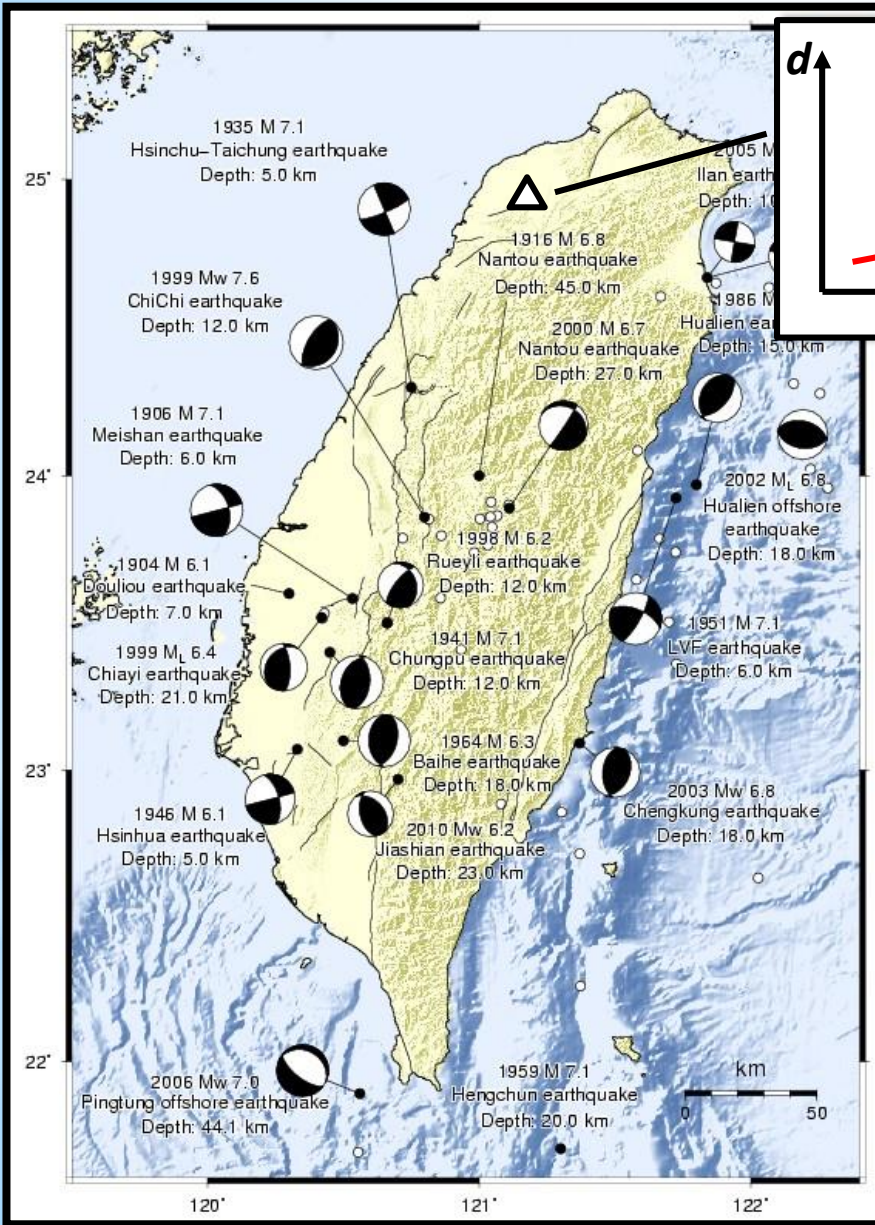
Original Displacement

Coseismic Displacement Model

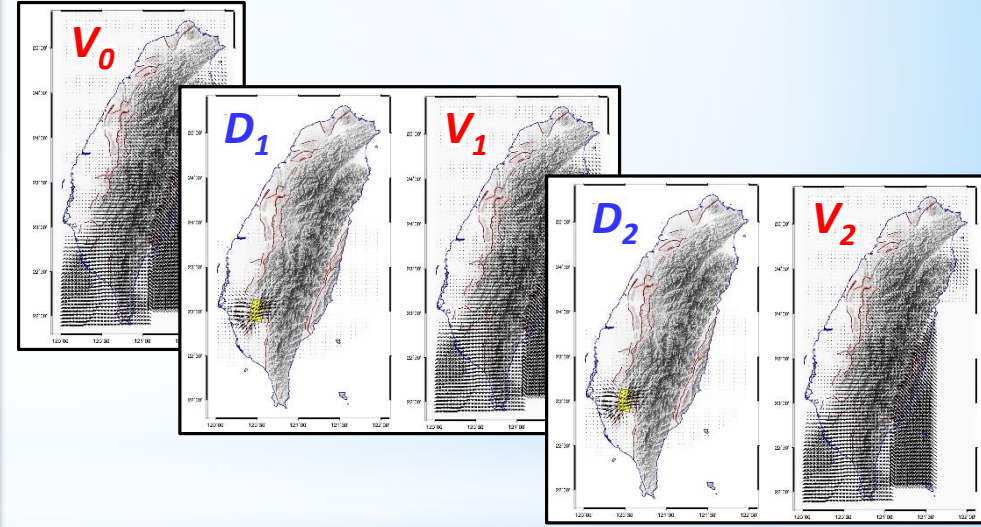
Uncertainty (Jackknife)



# Taiwan Semi-Dynamic Datum



Coordinate-Transformation



$$x_n^i(t) = a_n^i + b_n^i t + \sum_{j=1}^{n_c} c_{nj}^i H(t - T_{cj})$$

Deformation Model