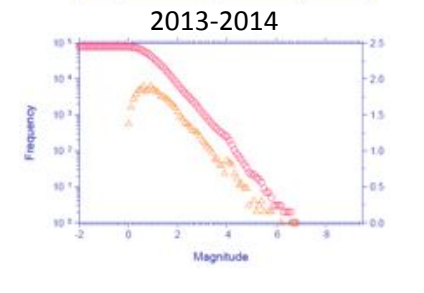
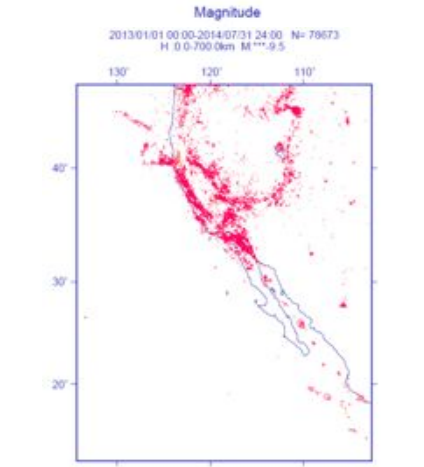
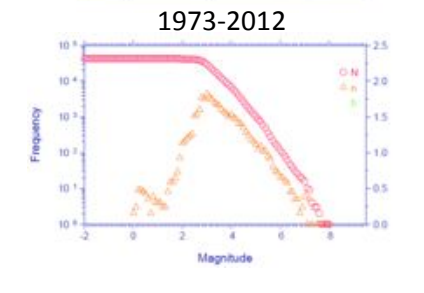
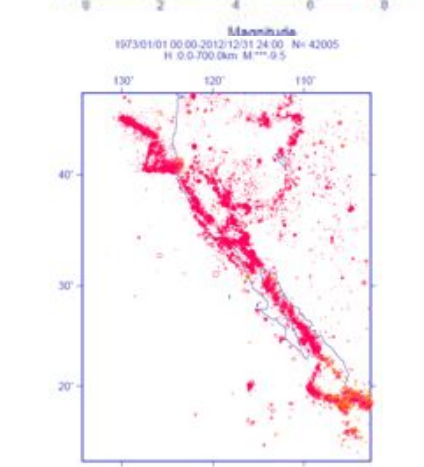
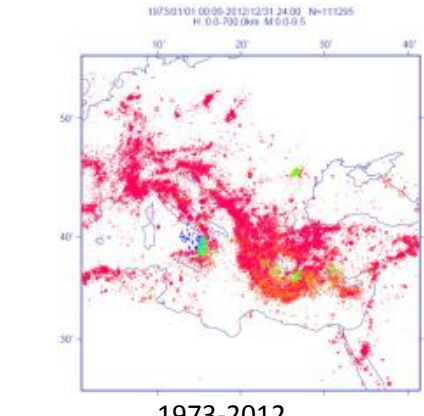
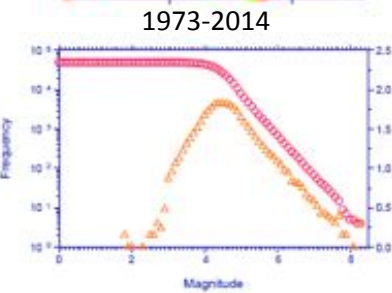
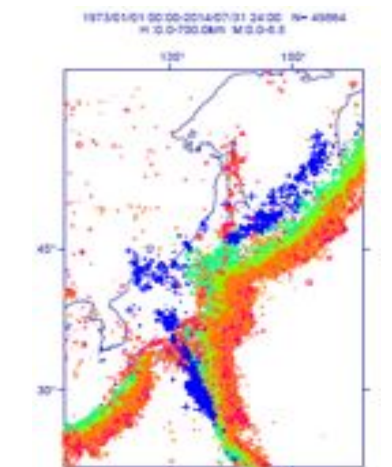
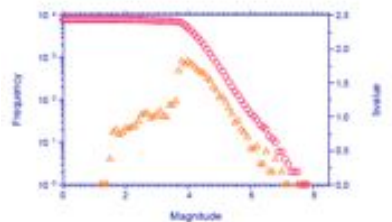
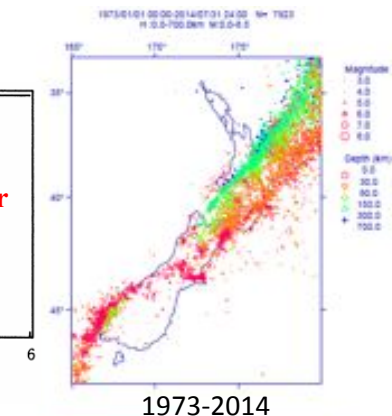
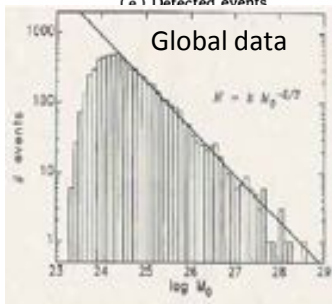
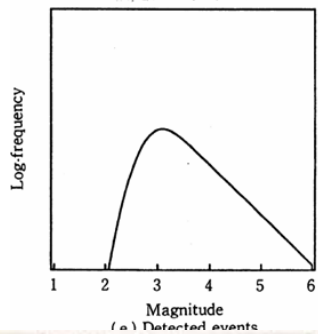
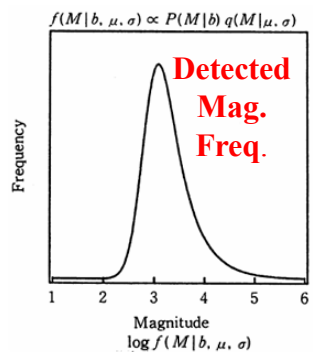
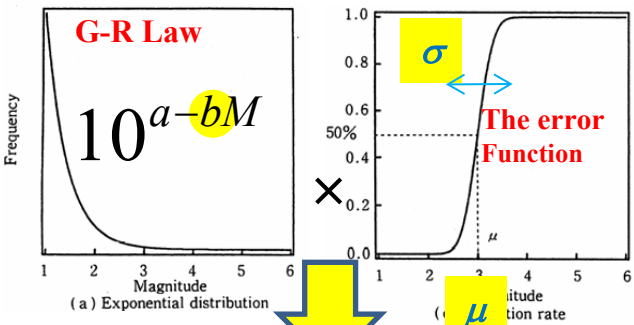
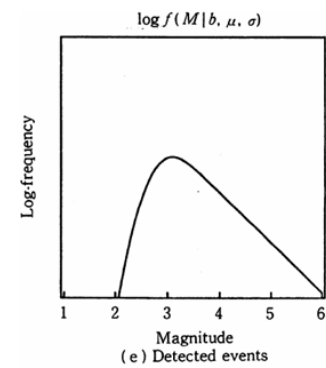
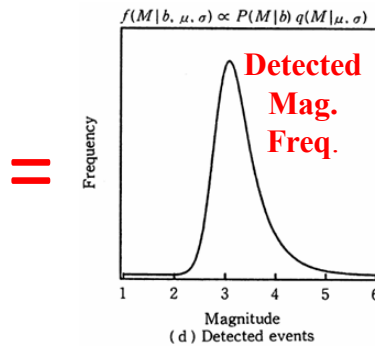
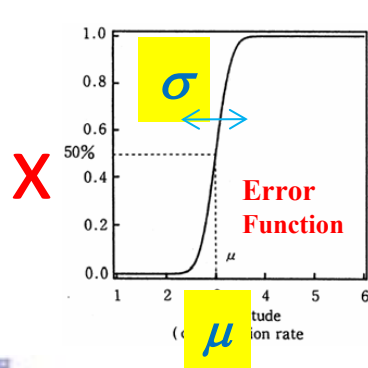
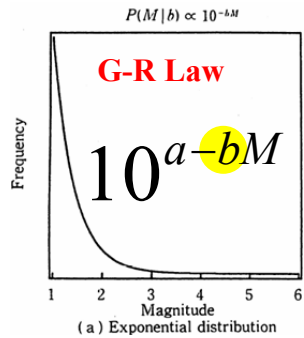
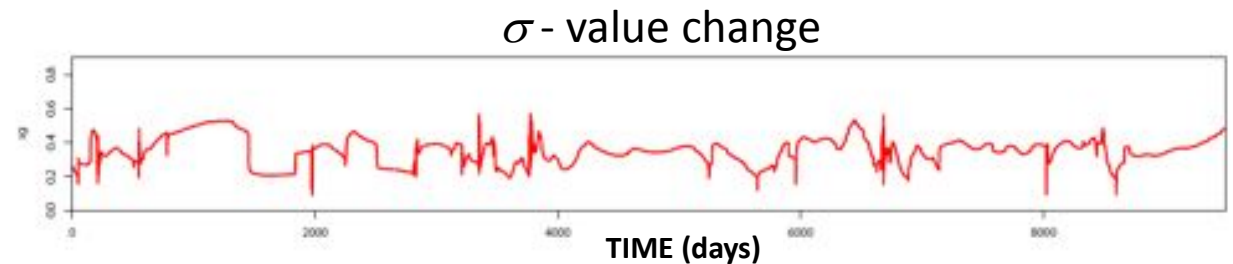
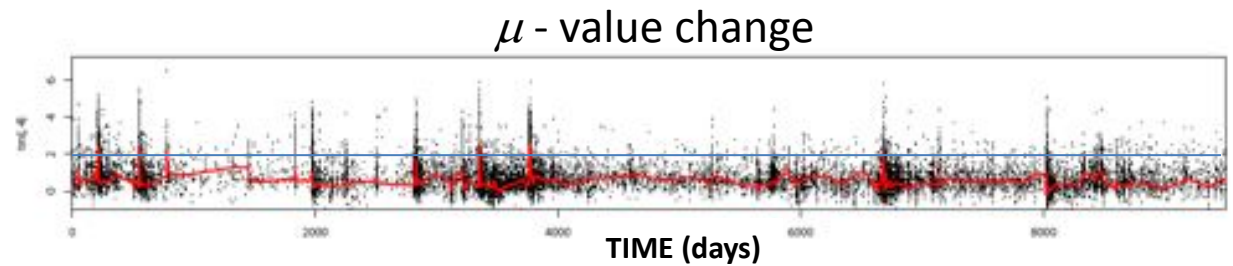
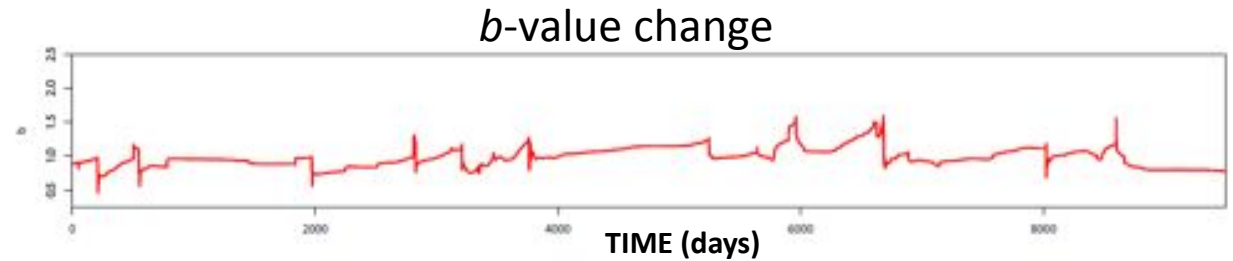
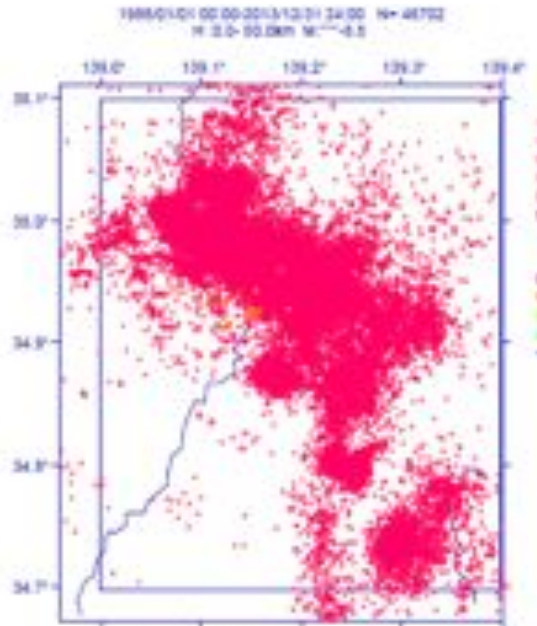


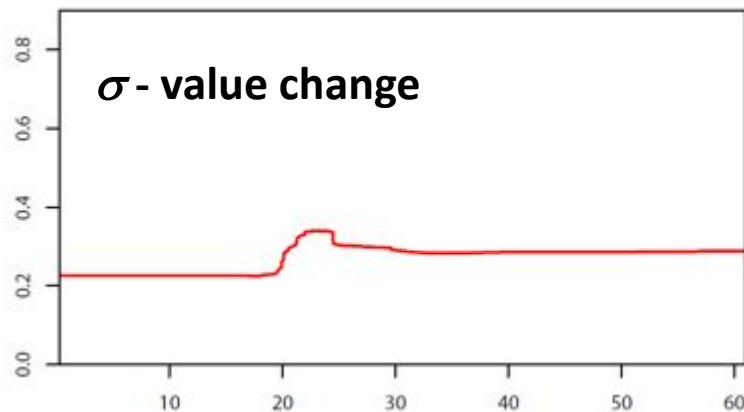
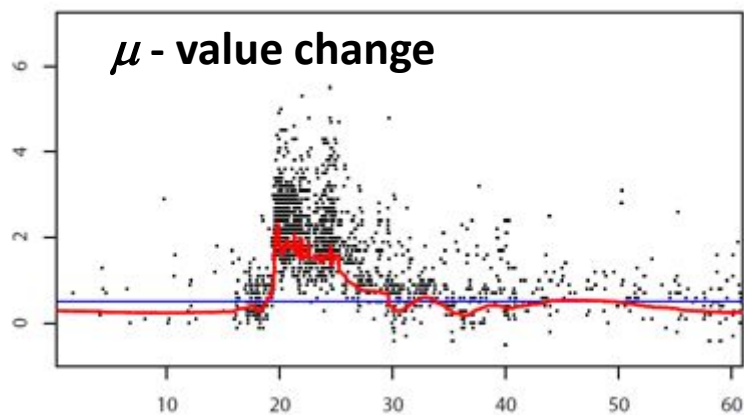
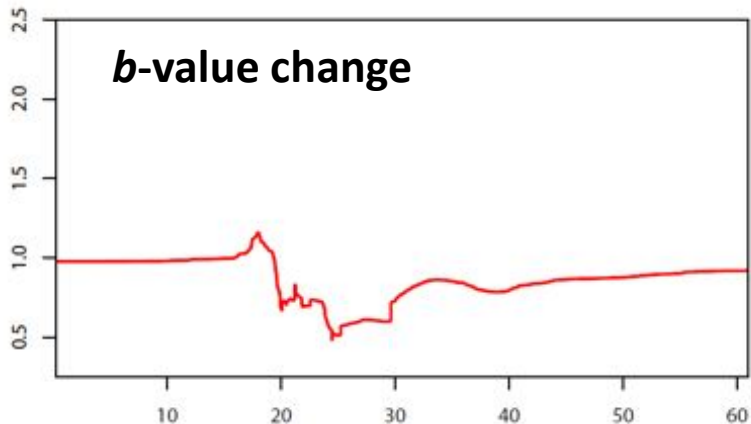
# Ogata and Katsura (1993, *GJI*)



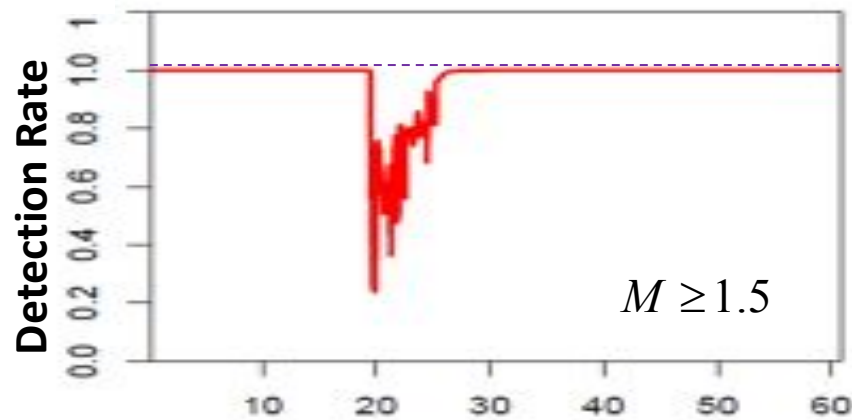
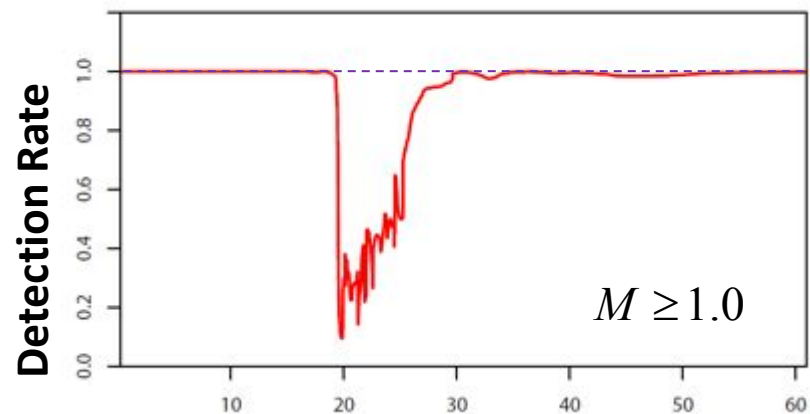
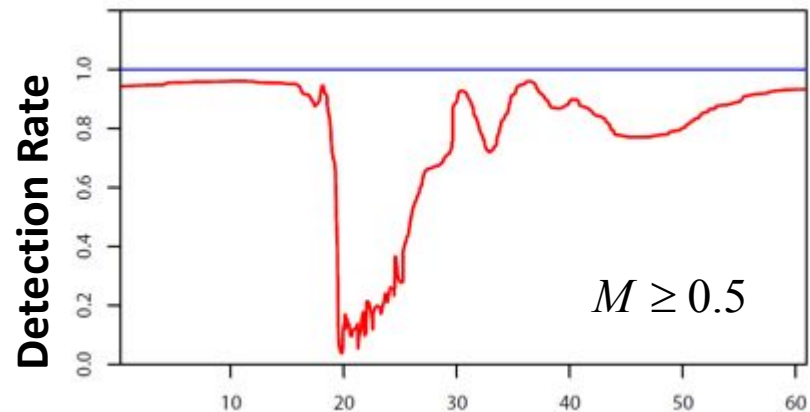


Ogata and Katsura (1993, *GJI*)





**TIME (days)**



**TIME (days)**



# NEIC $m_b$ vs ISC $M_b$ vs JMA $M_J$

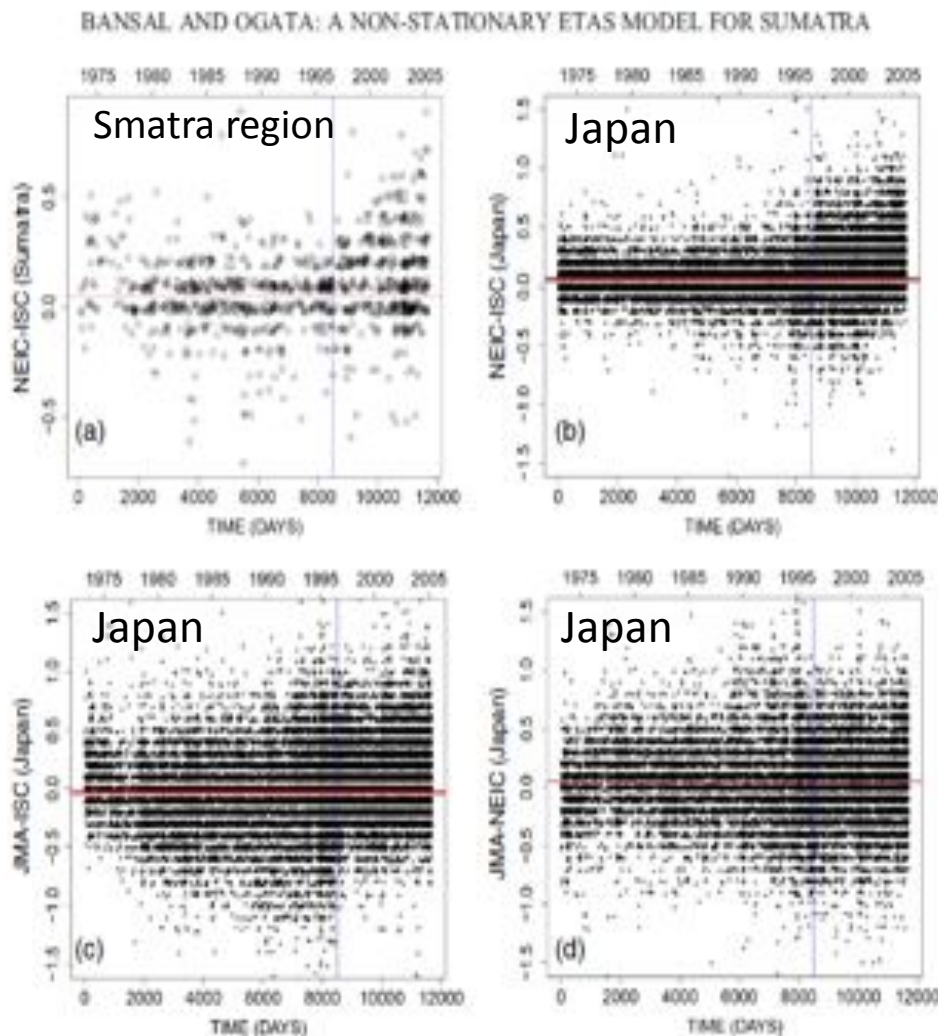
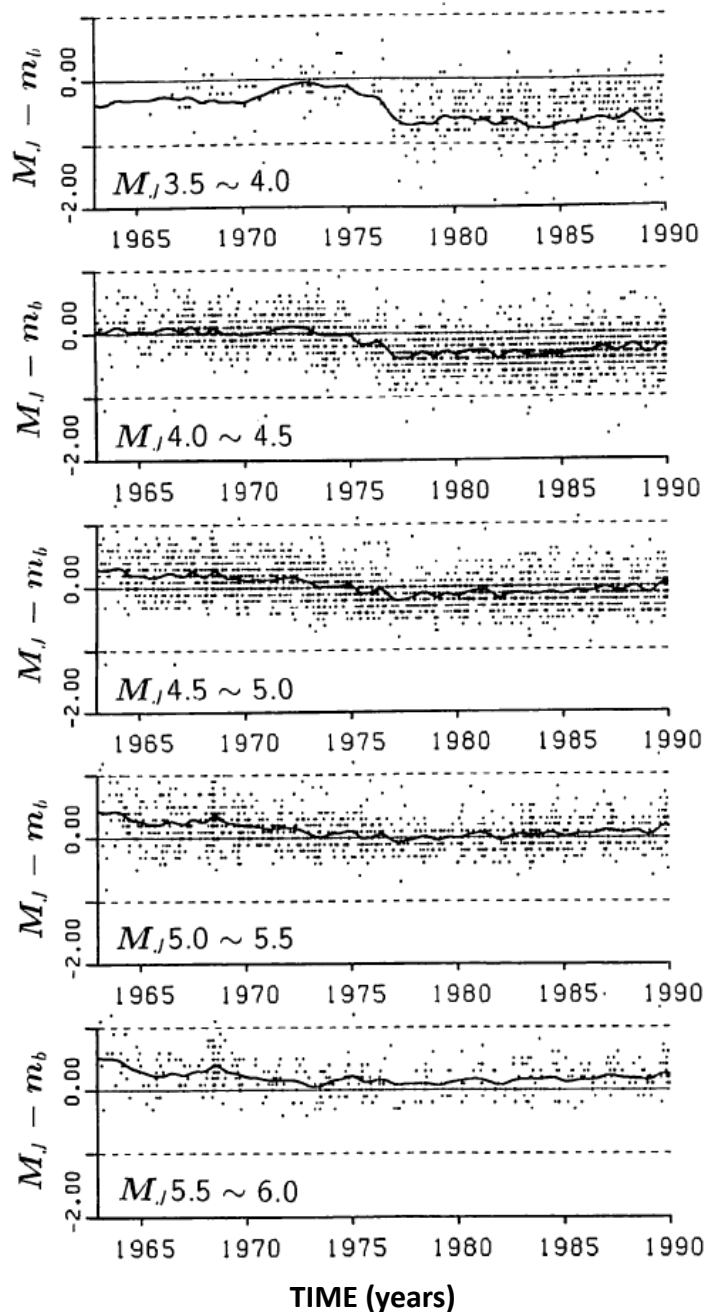


Figure 2. Time series of magnitude differences between NEIC ( $m_b$ ), ISC ( $M_b$ ), and JMA ( $M_J$ ) catalogs for the same earthquakes: (a)  $m_b - M_b$  for the Sumatra region, (b)  $m_b - M_b$  for the Japan region, (c)  $M_J - M_b$  for Japan region, and (d)  $M_J - m_b$  for the Japan region. The horizontal red lines are mean differences during the earlier period till 8500 days. The vertical lines correspond to the time of the possible magnitude shift.

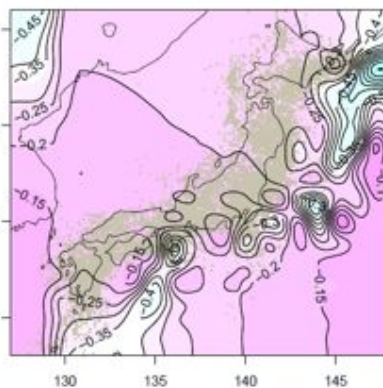
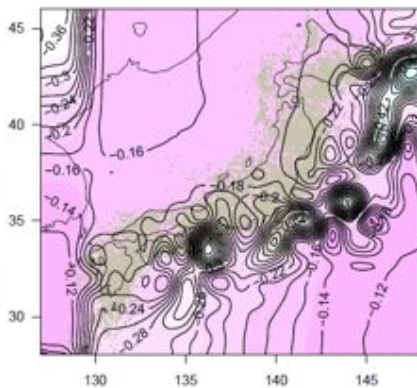
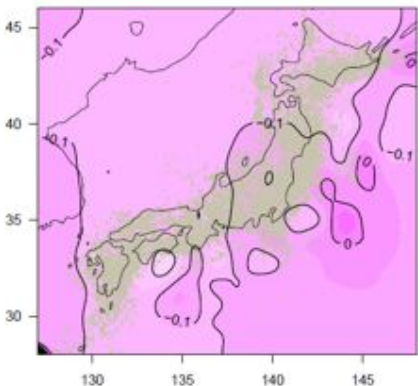
# On going joint work with Omi and colleagues of the NIED at Tsukuba

$$M_{JMA}(x,y) = M_{HINET} + \Delta M(x,y) \quad \text{Magnitude Difference}$$

$M_{HINET}=0.0$

$M_{HINET}=1.0$

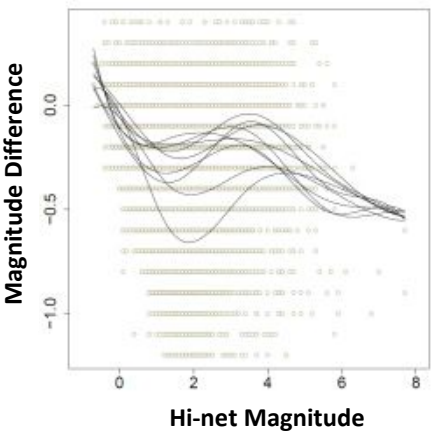
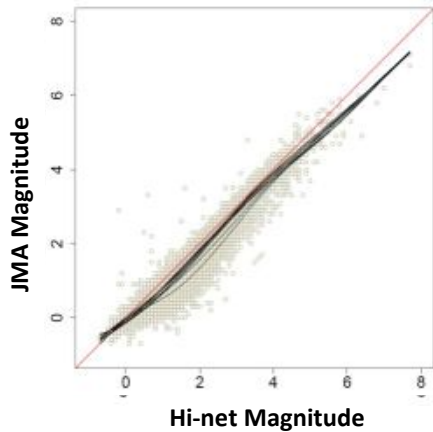
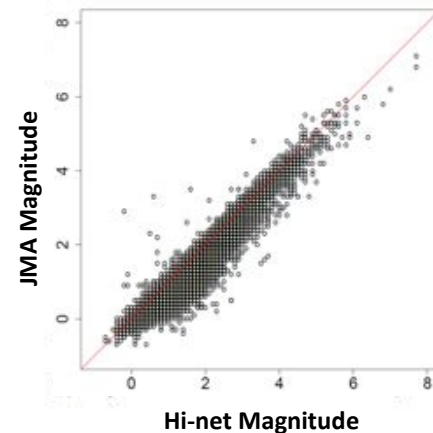
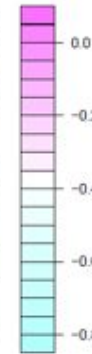
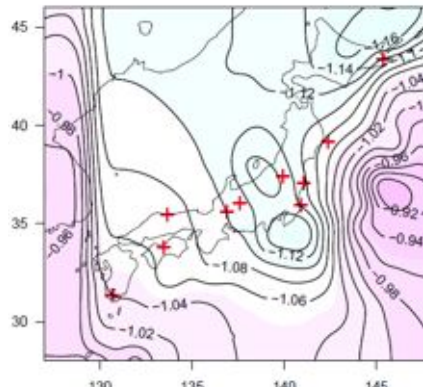
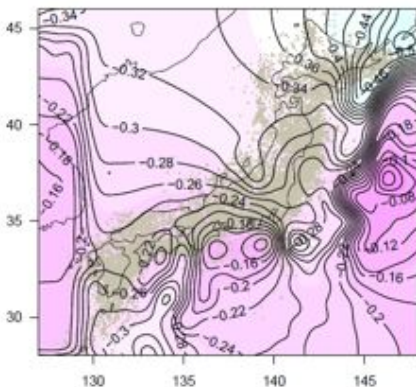
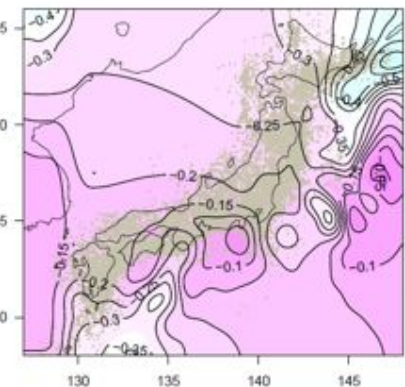
$M_{HINET}=2.0$



$M_{HINET}=3.0$

$M_{HINET}=4.0$

$M_{HINET}=5.0$





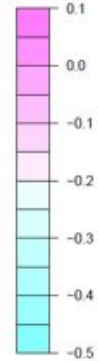
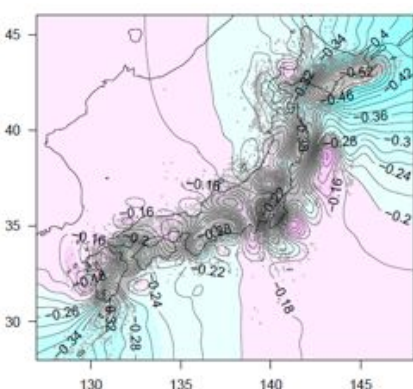
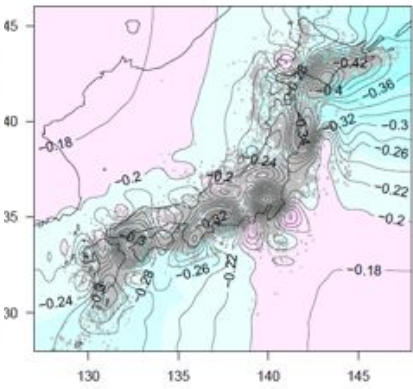
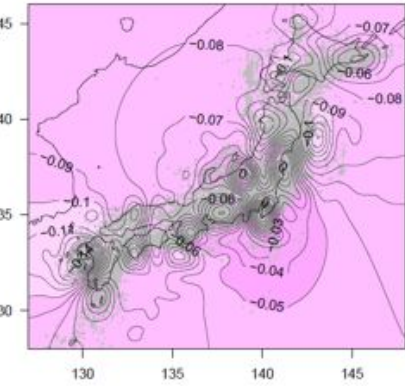
On going joint work with Omi and colleagues of the NIED at Tsukuba

$M_{JMA}(x,y) = M_{HINET} + \Delta M(x,y)$  **Magnitude Difference**

$M_{HINET}=0.0$

$M_{HINET}=1.0$

$M_{HINET}=2.0$



$M_{HINET}=3.0$

$M_{HINET}=4.0$

$M_{HINET}=5.0$

