

# Seismicity associated with SSE in NZ

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Wednesday, May 29, 13, Goprisms meeting, Wellington

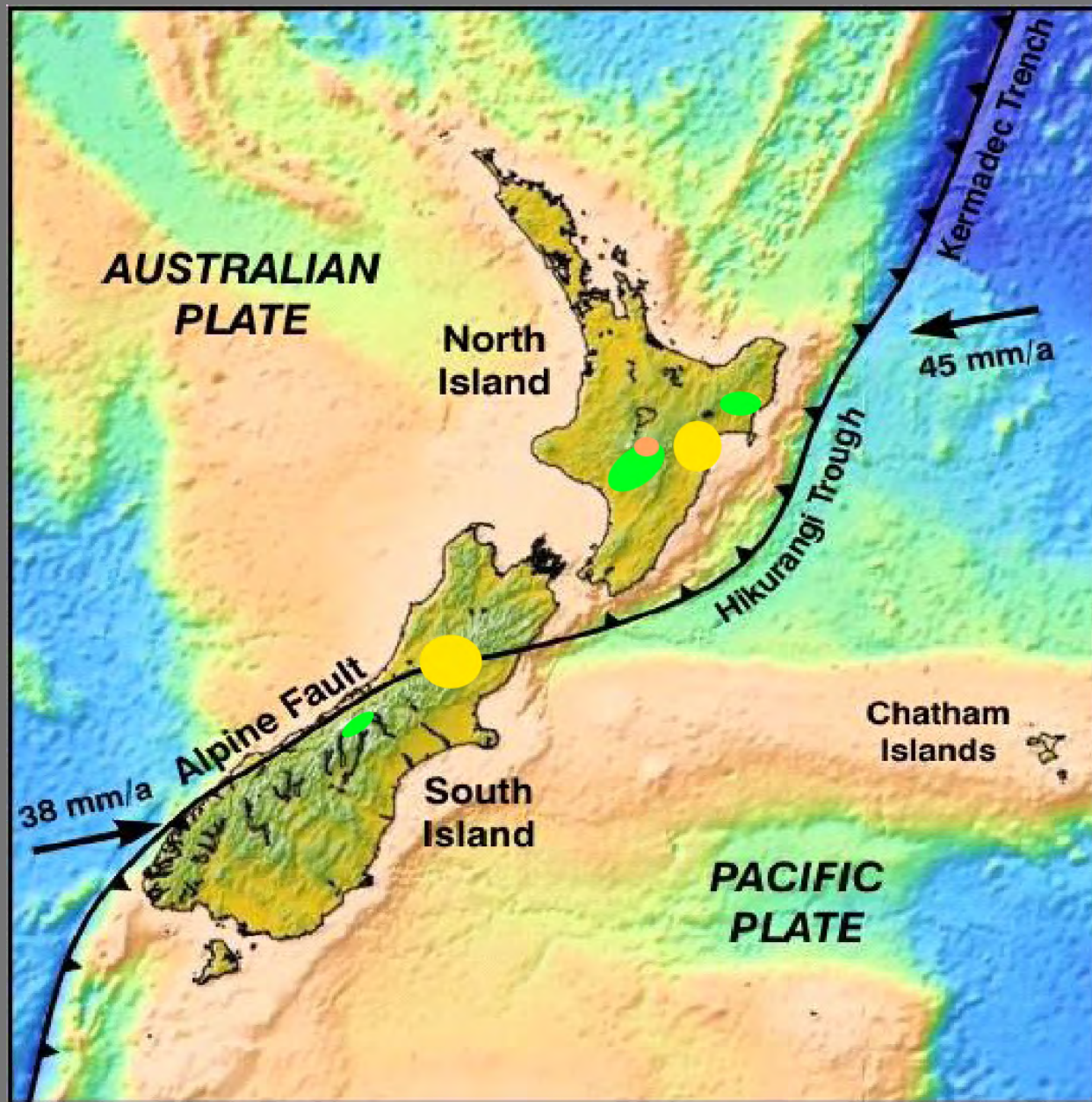


# SSE seismicity in NZ

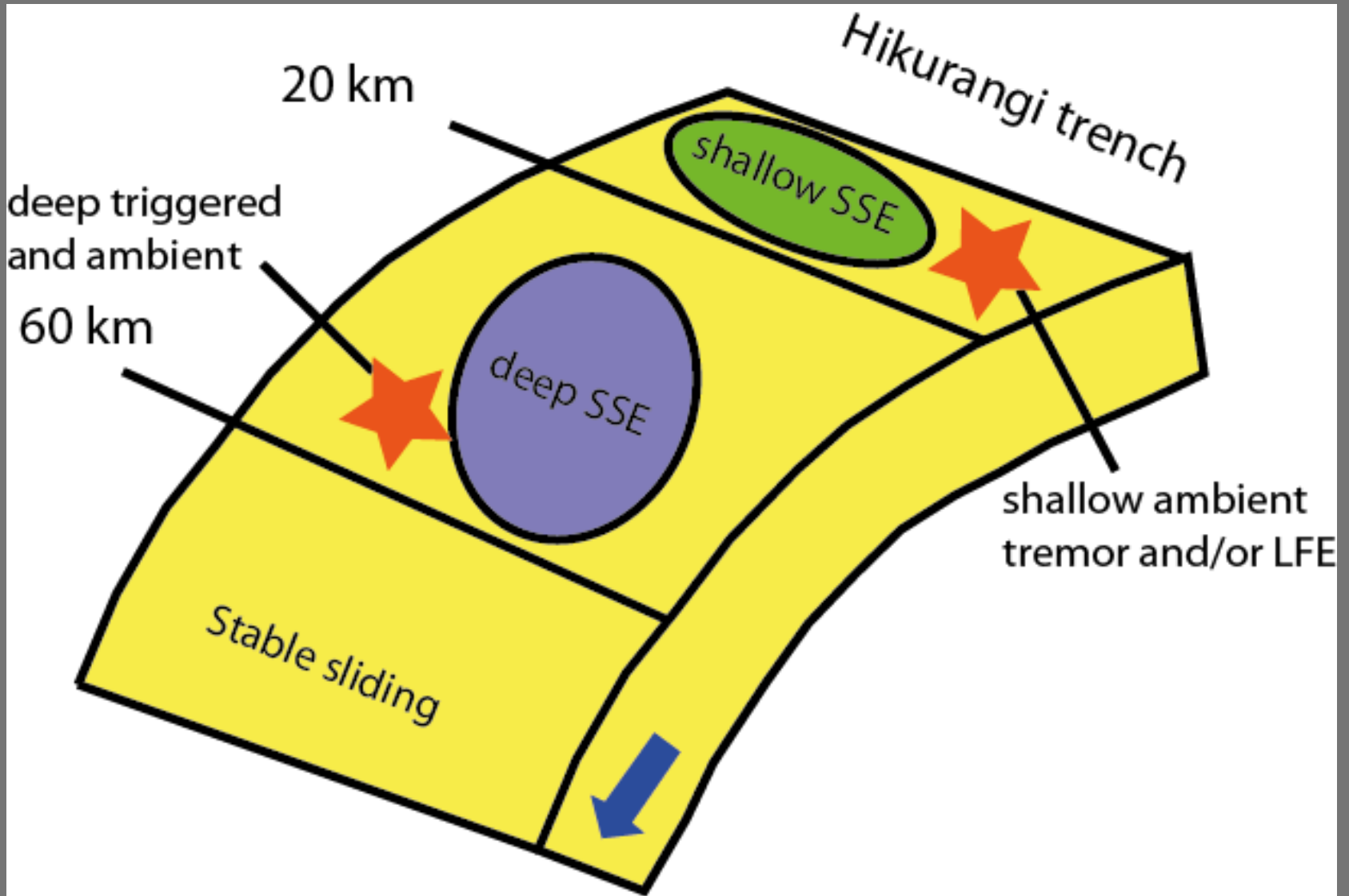
- Tremor
  - ETS?
- Micro seismicity
  - Mahia example
- Macro seismicity
  - Gisborne example

What is tremor?

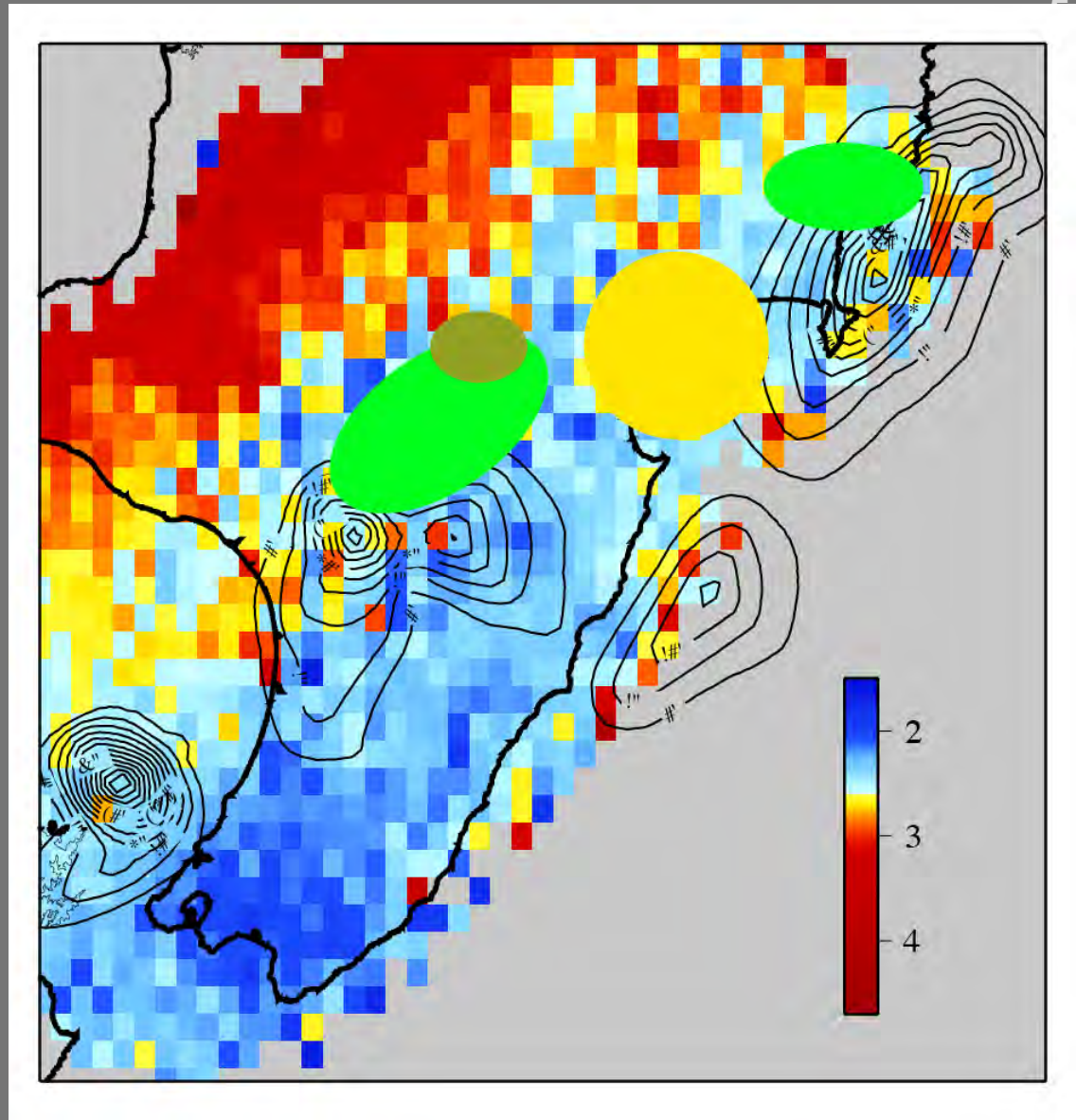
Where have we seen it in NZ?



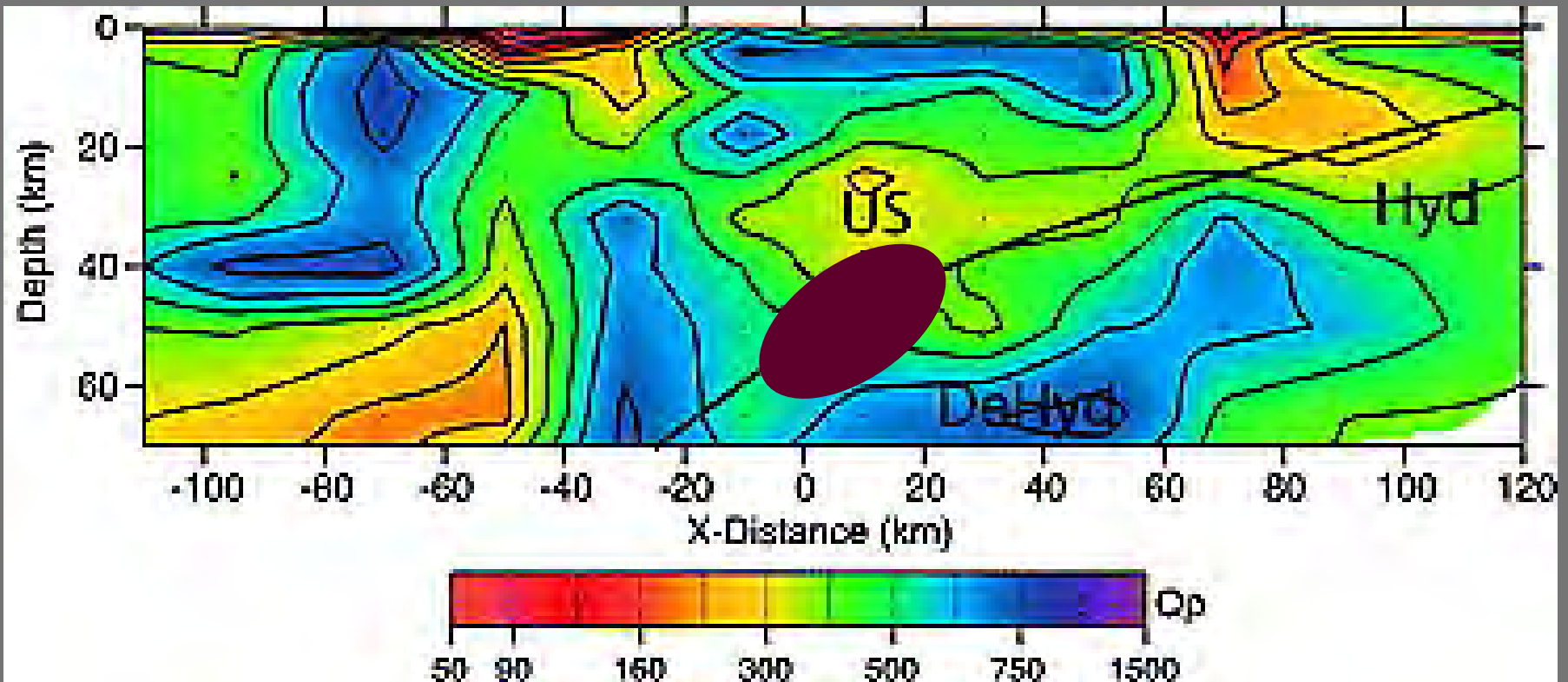
Fry et al., 2011; Kim et al., 2011; Ide 2012; Wech et al., 2012); Fry (unpublished)



# Hikurangi tremor

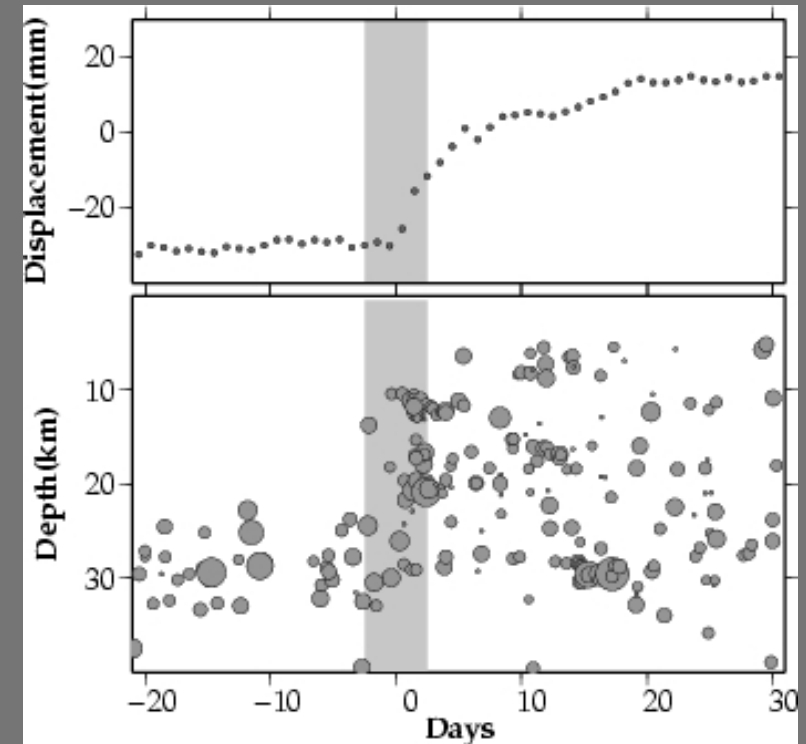
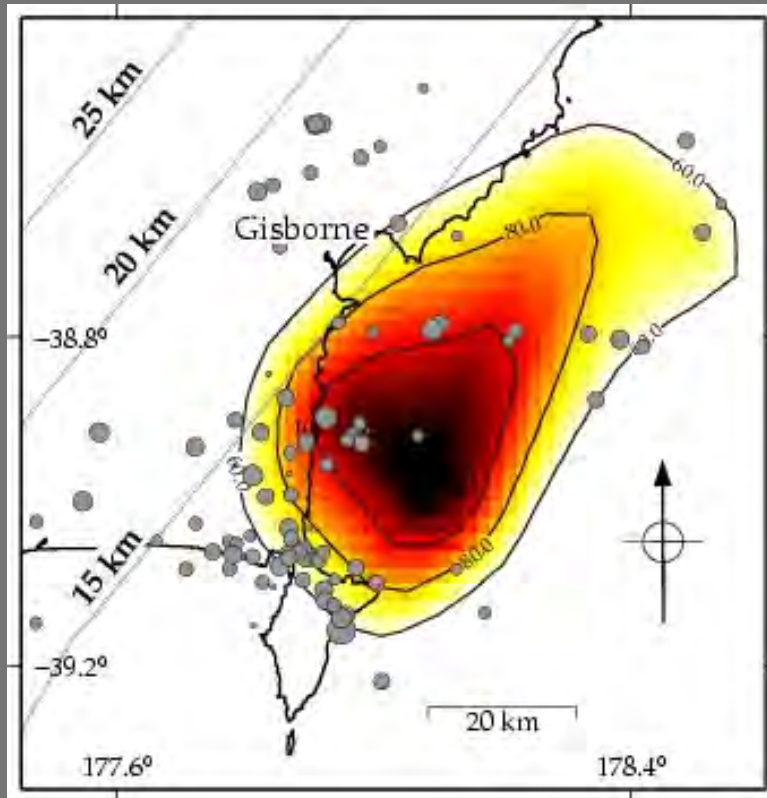


SSE from L.Wallace, tremor from Fry et al., 2011, Kim et al., 2011, Ide, 2012, and Fry (unpublished)



$Q_p$  from Eberhart-Phillips et al., 2008,  
tremor from Fry et al., 2011 and Ide, 2012.

## Mahia-Gisborne : seismic activity synchronous with 2010-Feb SSE

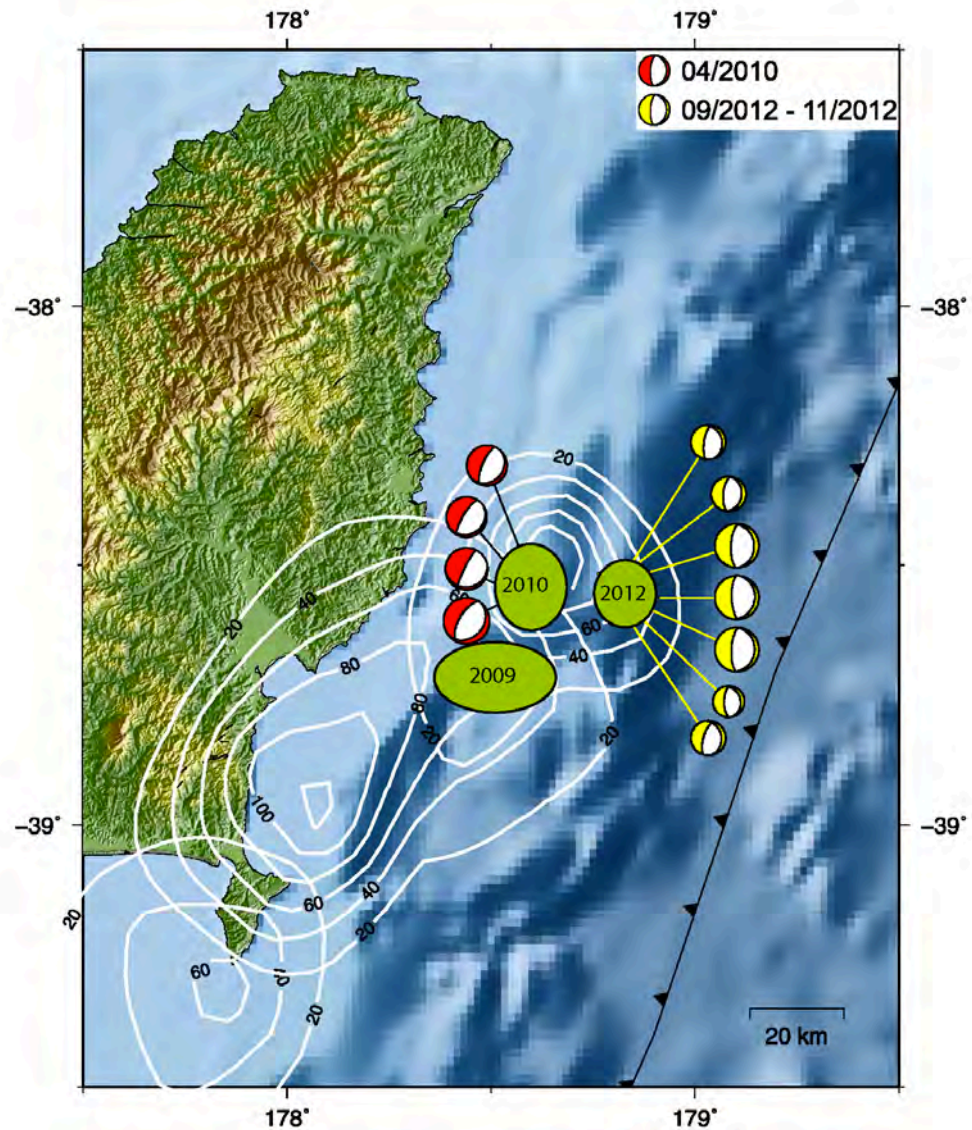


SSE inversion from L. Wallace and seismicity from S. Bannister

# Swarms of larger events

Events > M4

Regional moment tensor solutions from J. Ristau





## Thoughts:

- Seismic association with SSE includes tremor, micro-, and macro-seismicity
- Some SSE have no obvious associated seismicity, some do
- Shallow nature of plate interface offshore Gisborne yields increased sensitivity of monitoring equipment -> maybe we can “fill-in” the continuum of seismic and aseismic observations with OBS
- Time scales of triggering (or interaction between SSE, tremor, earthquakes, and potential great earthquakes.