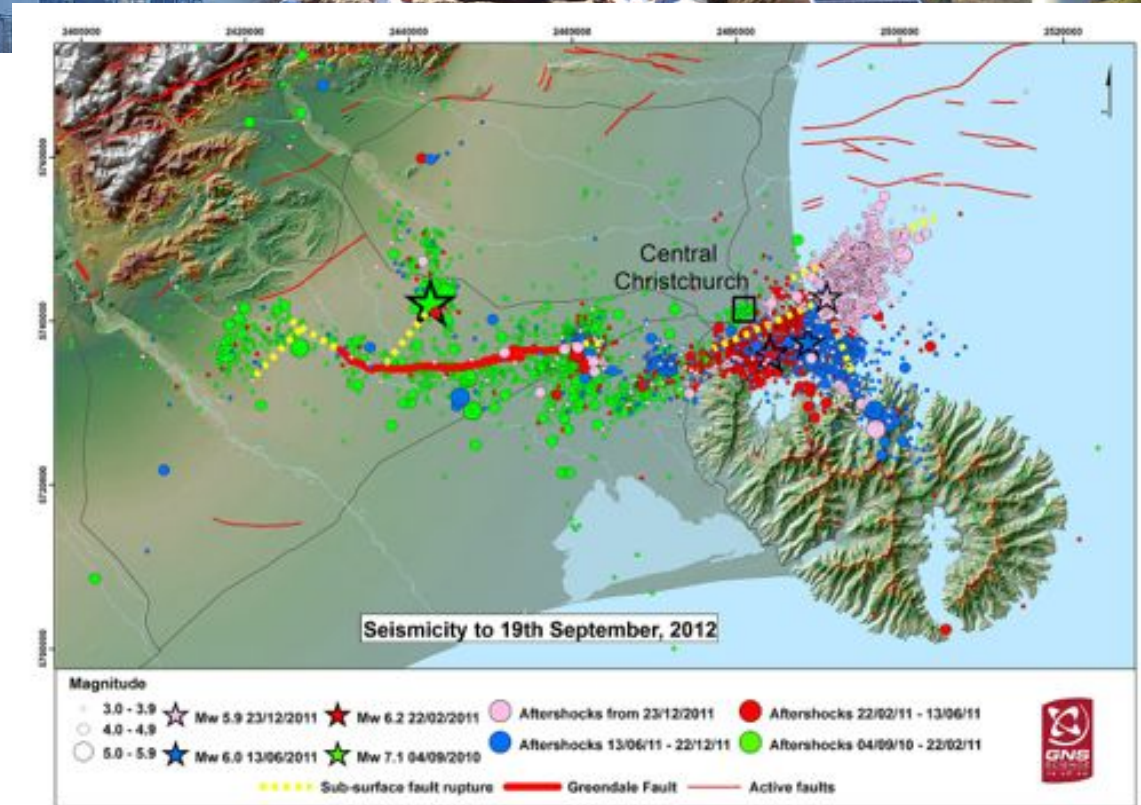




Retrospective Evaluation of Models during the 2010-12 Canterbury Sequence

Preliminary 1-yr & 1-mo Results



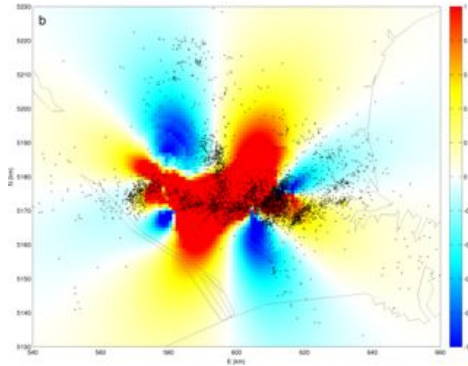
2010-12 Canterbury, NZ

RETROSPECTIVE EXPERIMENT

Joint SCEC/REAKT/GNS project

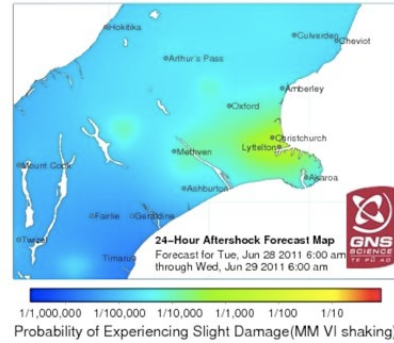
- Improve understanding of earthquake triggering
- Improve time-dependent hazard estimates
- Understand influence of “real-time” data on forecasts

Installed Models



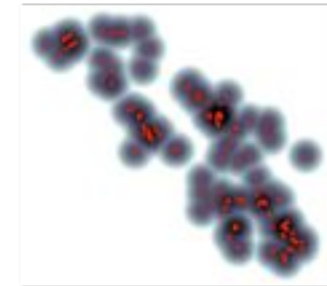
Coulomb

Steacy, Gerstenberger
Cattania et al.



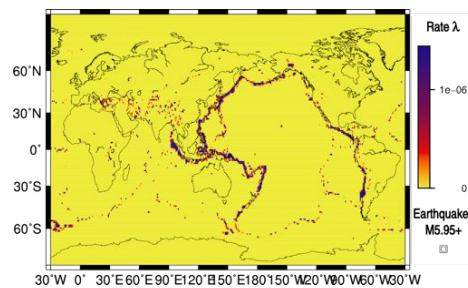
ETAS

Helmstetter & Werner
Hainzl et al.



Smoothing

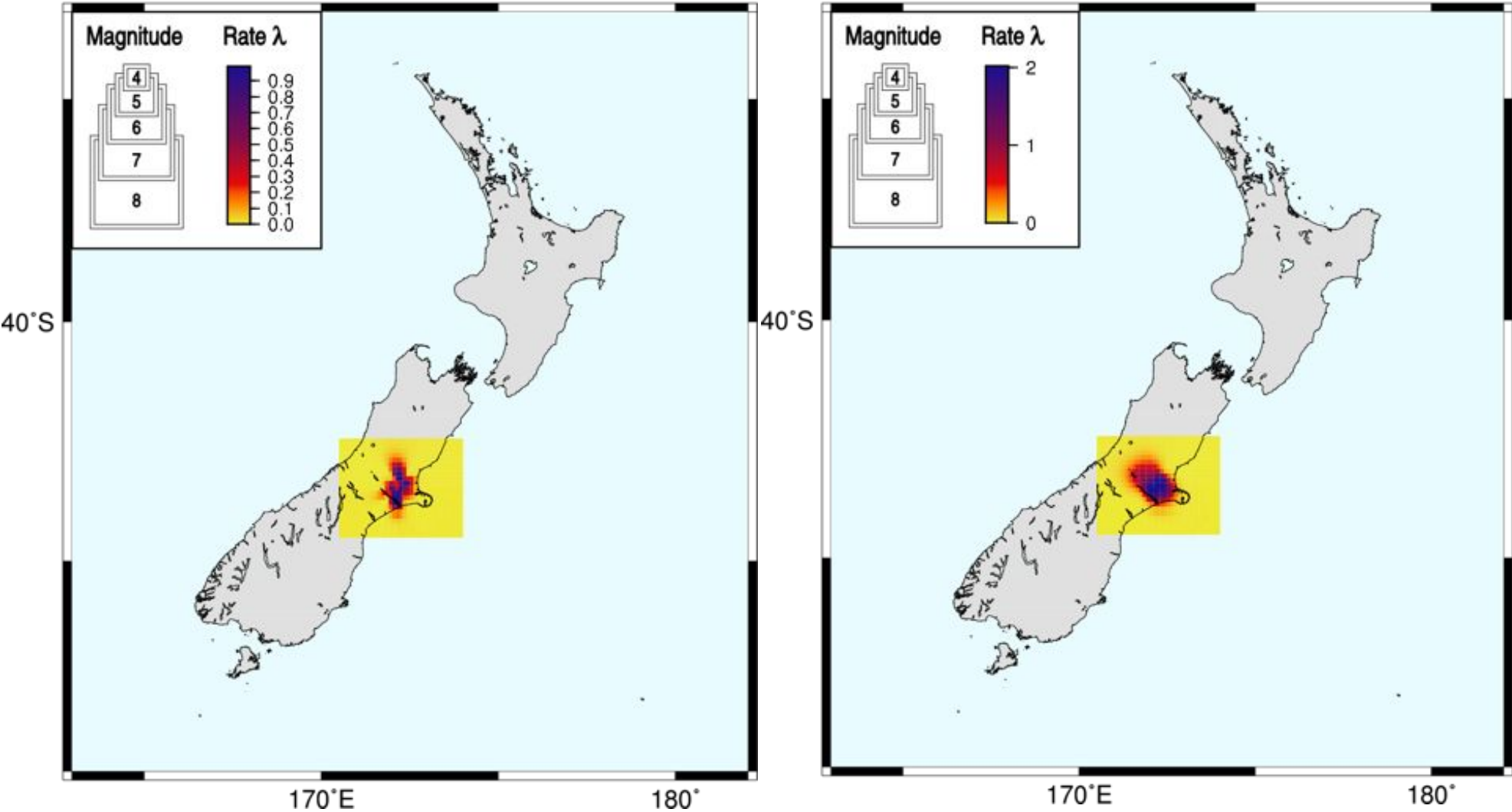
Helmstetter & Werner



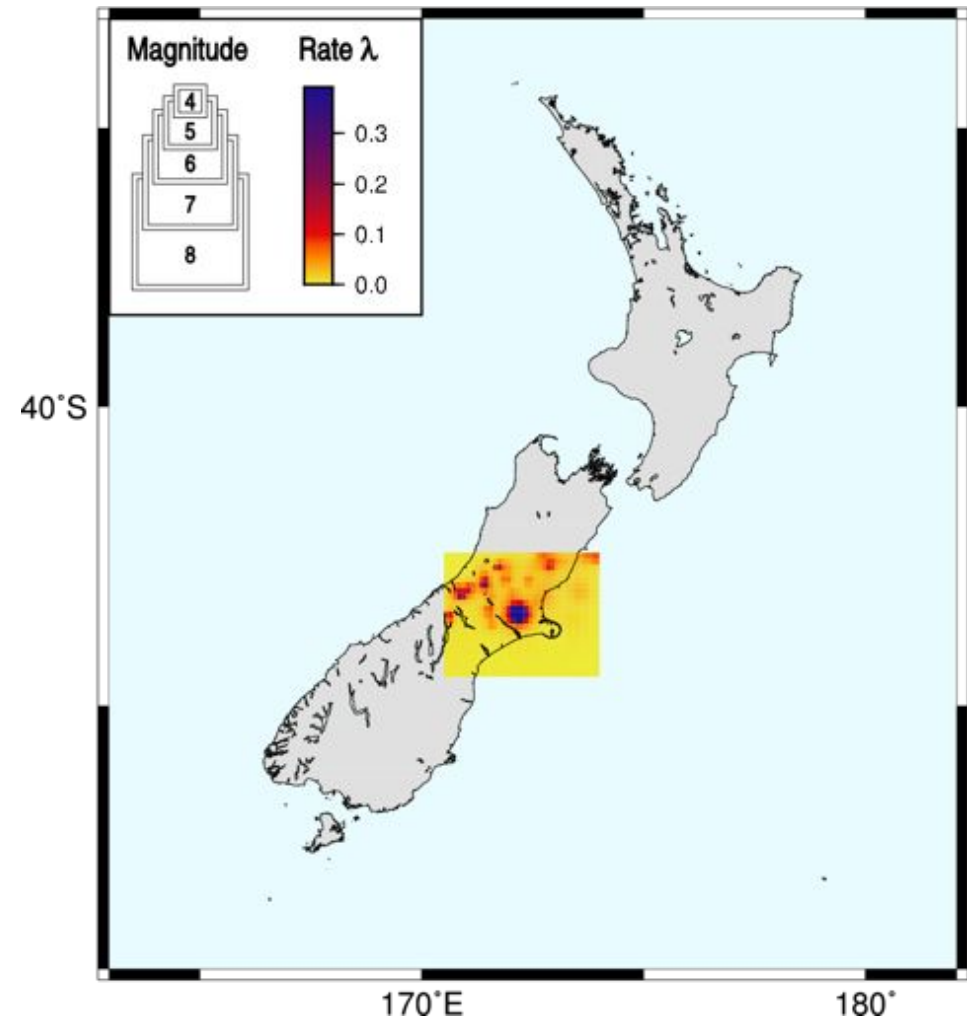
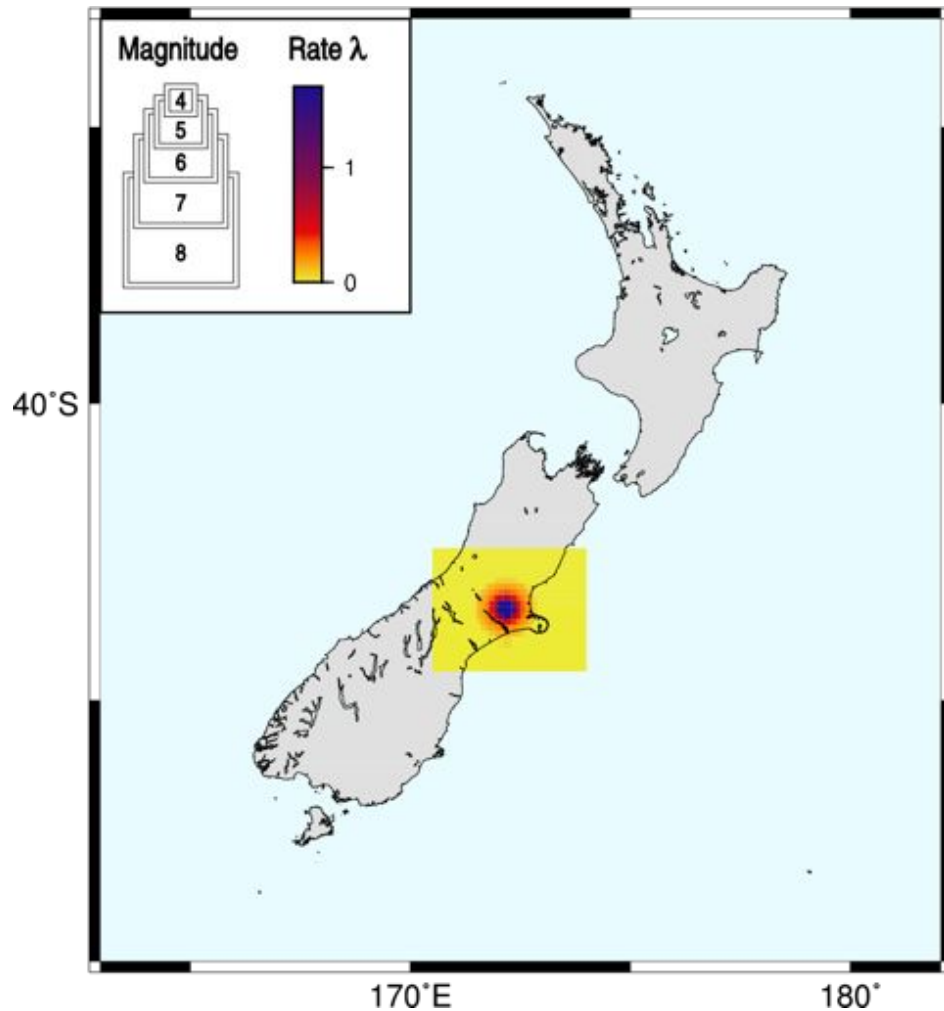
Reference Models

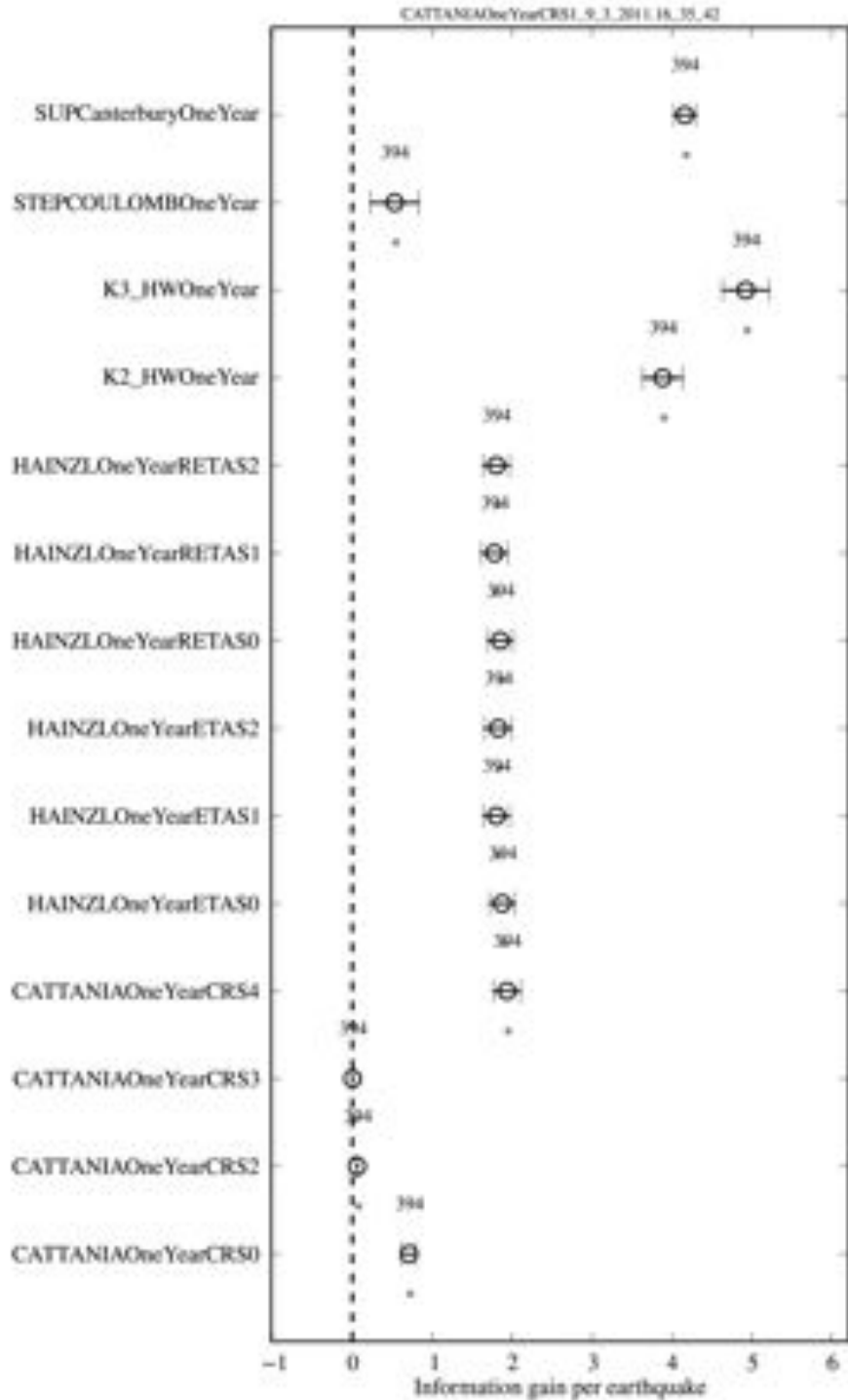
Uniform Poisson model

CRS0 & CRS3



STEPCoulomb & ETAS0





Testing period:

2010/09/03 – 2012/02/28

2x 1-yr forecasts

(2nd 1-yr forecast scaled)

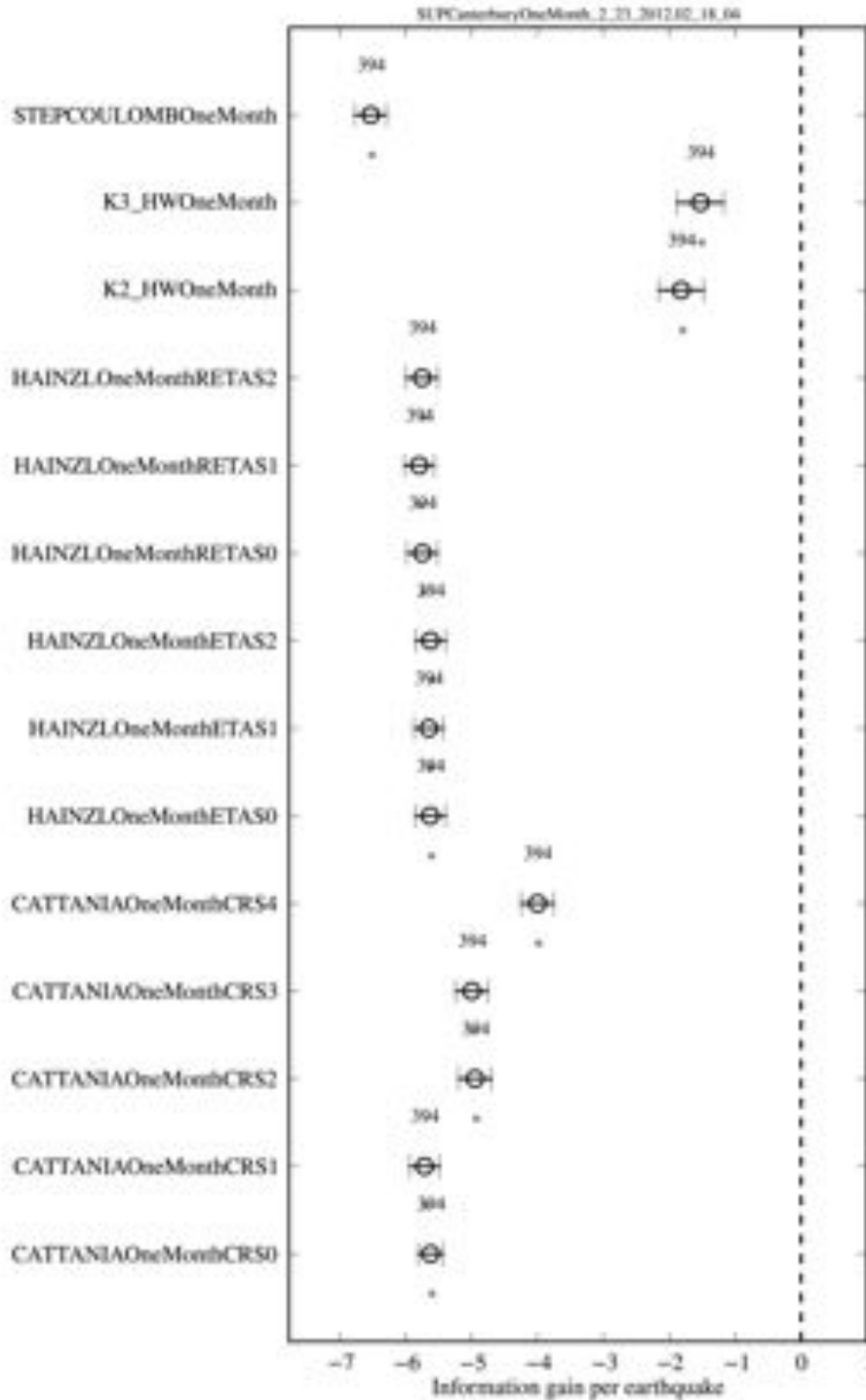
Target events:

$M \geq 3.95$ (394)

Reference model:

CRS1

**(Coulomb/rate-state w/
uncertainties)**



Testing period:

2010/09/03 – 2012/02/28

multiple 1-mo forecasts

(start periods adjusted to major quakes)

Target events:

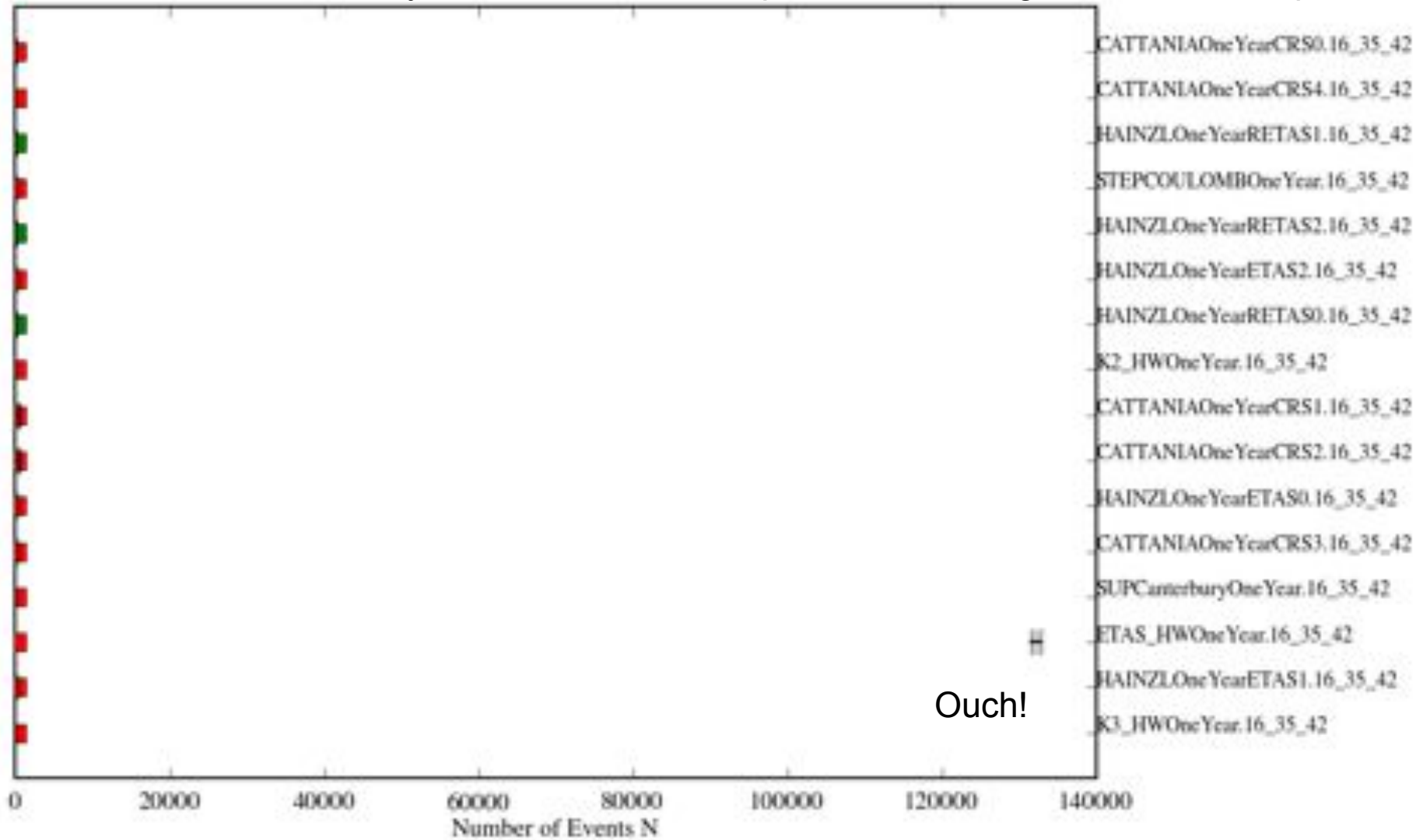
$M \geq 3.95$ (394)

Reference model:

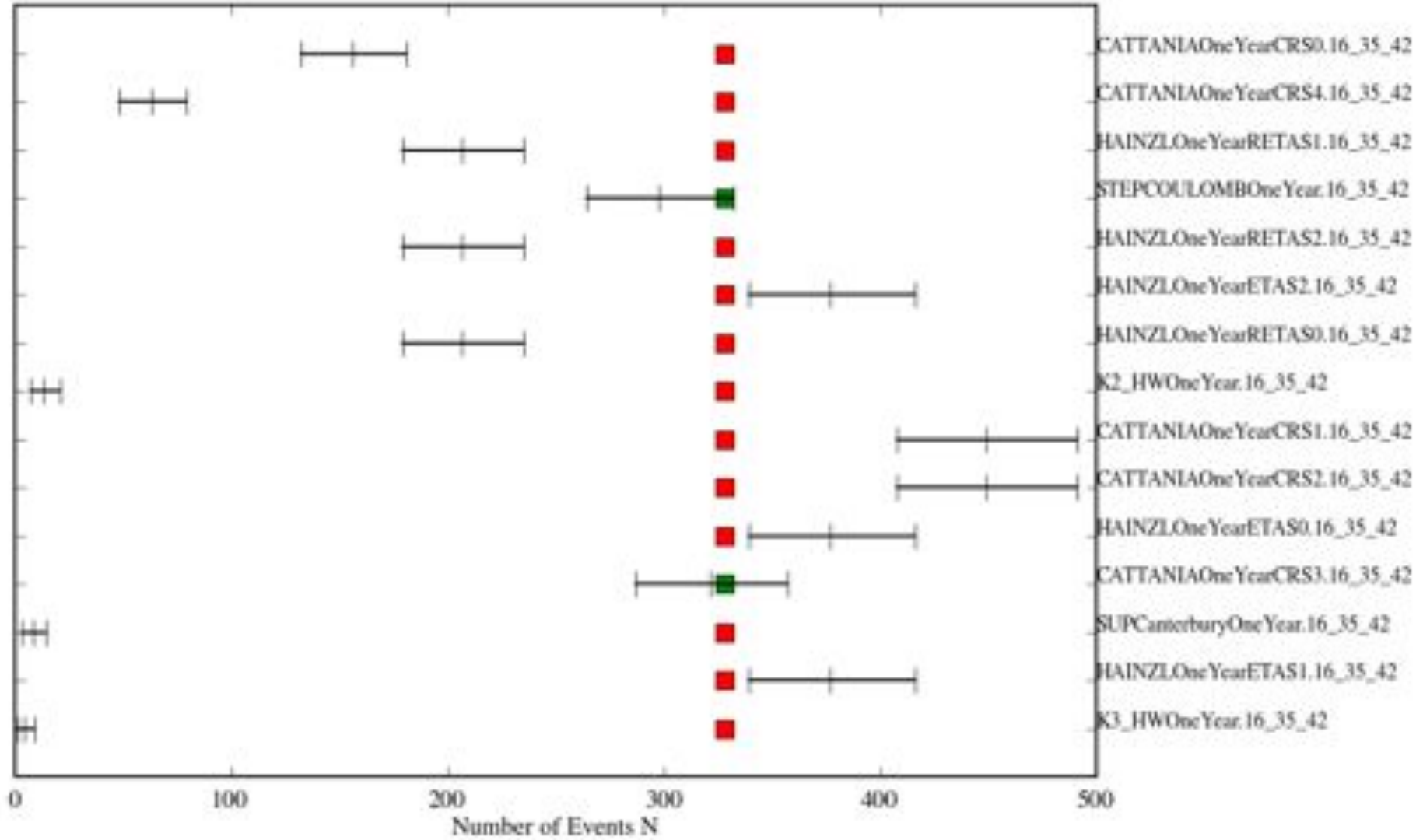
SUP

(Spatially Uniform Poisson)

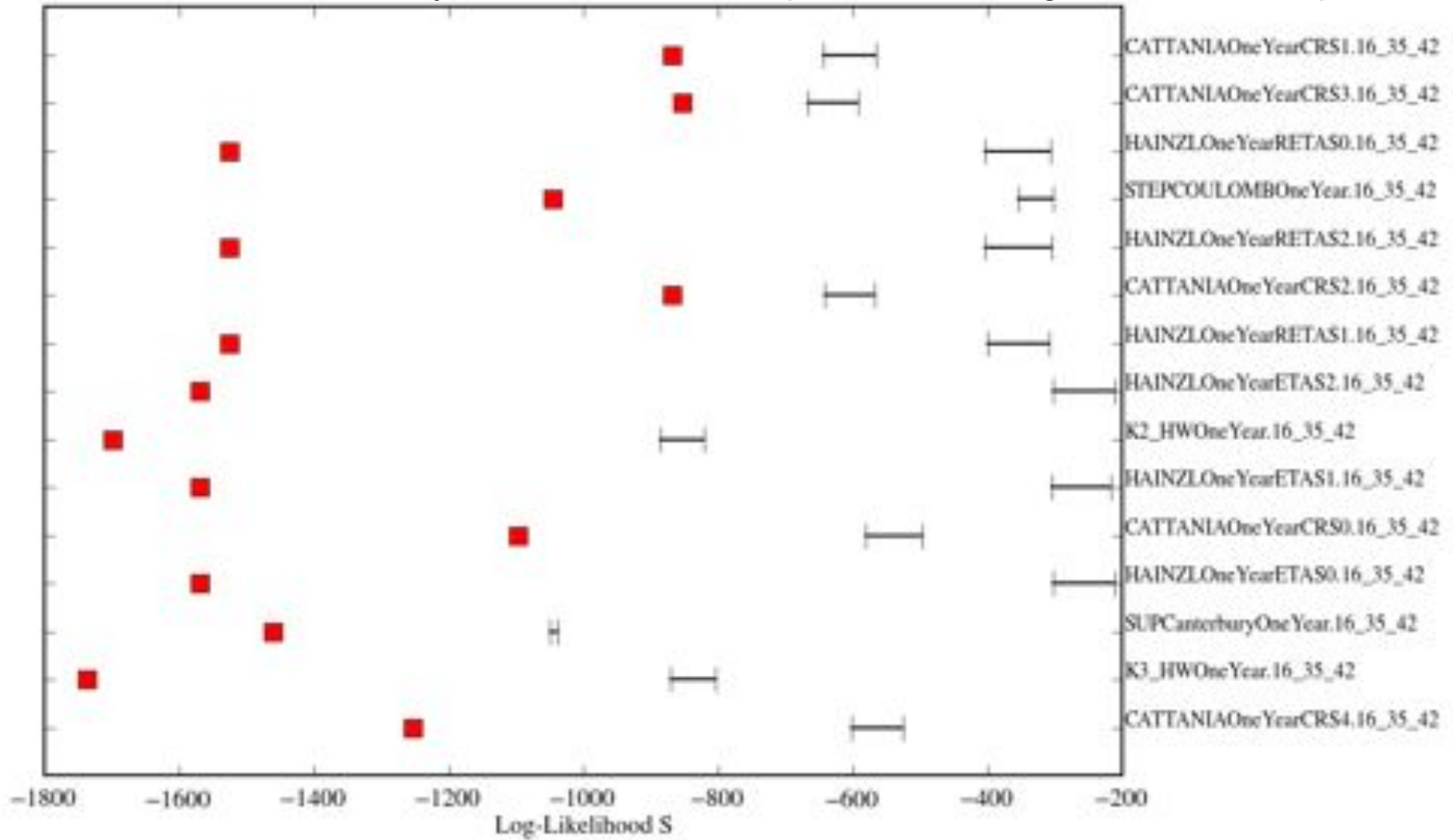
N-Test results 1-yr forecast evaluated up to and including the Feb 2011 Eqk.



N-Test results 1-yr forecast evaluated up to and including the Feb 2011 Eqk.



S-Test results 1-yr forecast evaluated up to and including the Feb 2011 Eqk.



cL-Test results 1-yr forecast evaluated up to and including the Feb 2011 Eqk.

