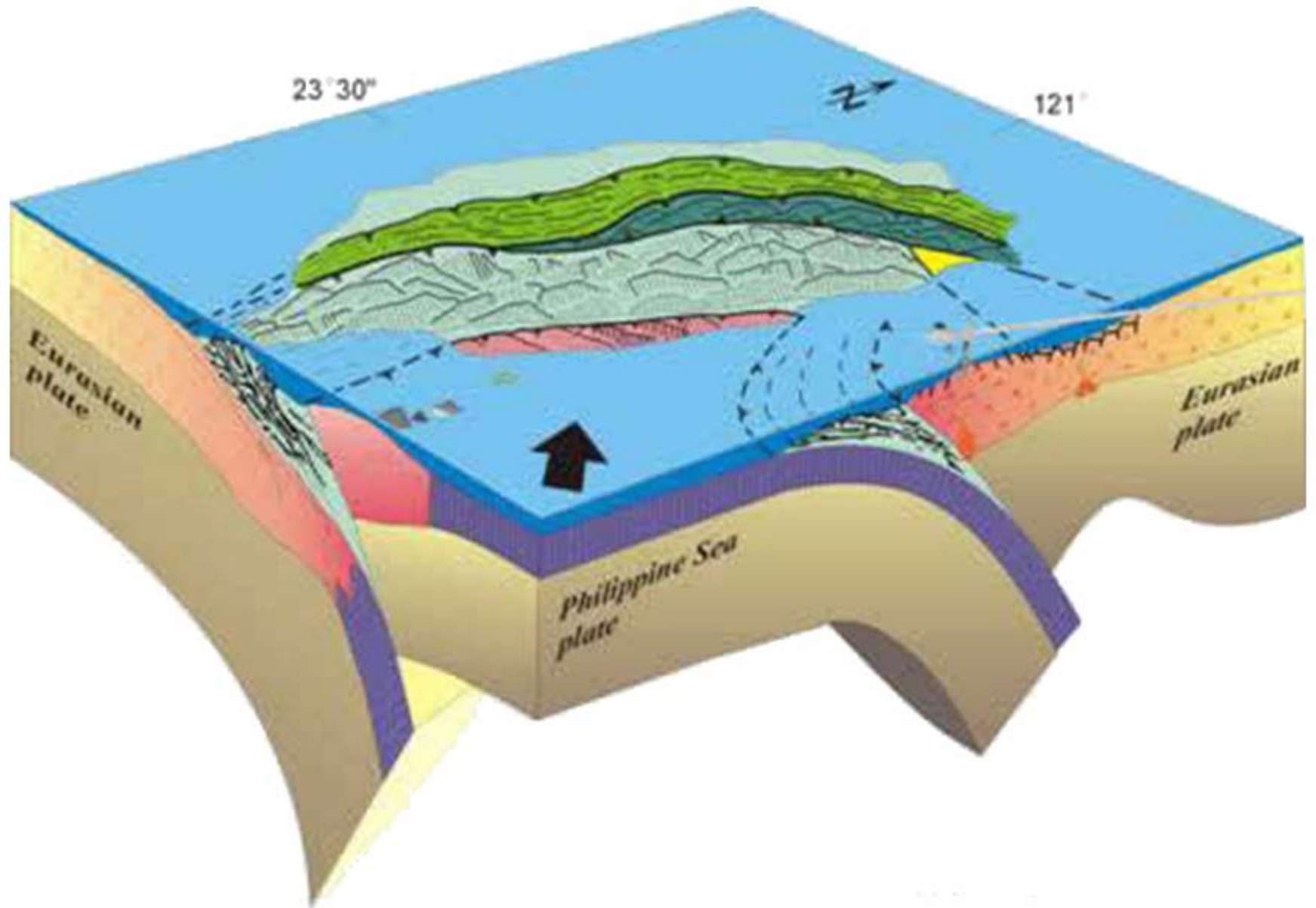


Seismicity and tectonics in and around Taiwan

Yuzo Ishikawa¹⁾ and Cheng-Horng Lin²⁾

*1) Active Fault and Earthquake Research
Center (AIST), Japan*

*2) Institute of Earth Science,
Academia Sinica*

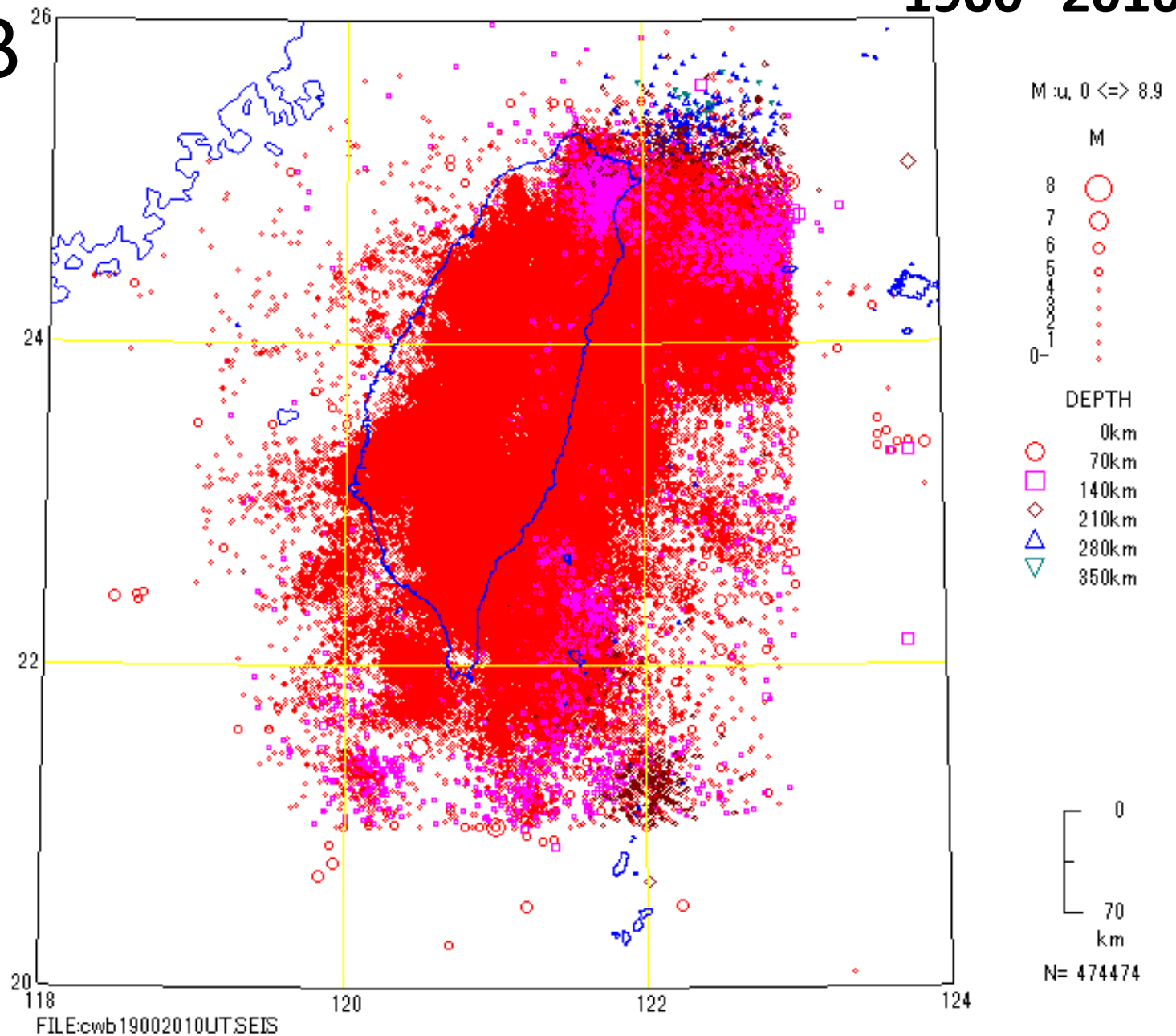


after Angelier (1986)

1900 1/1 0:0 -- 2010 12/31 23:59

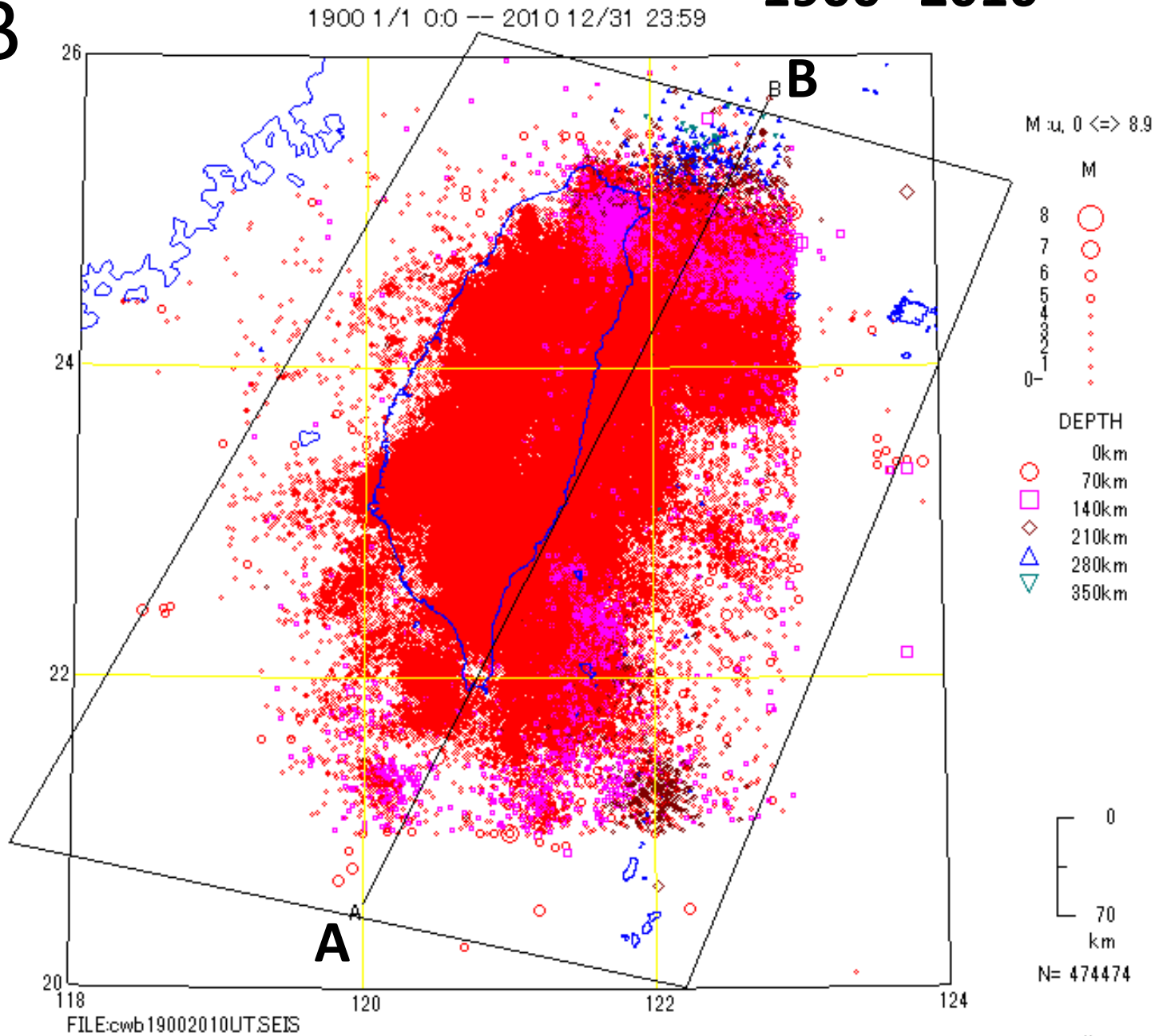
1900--2010

CWB



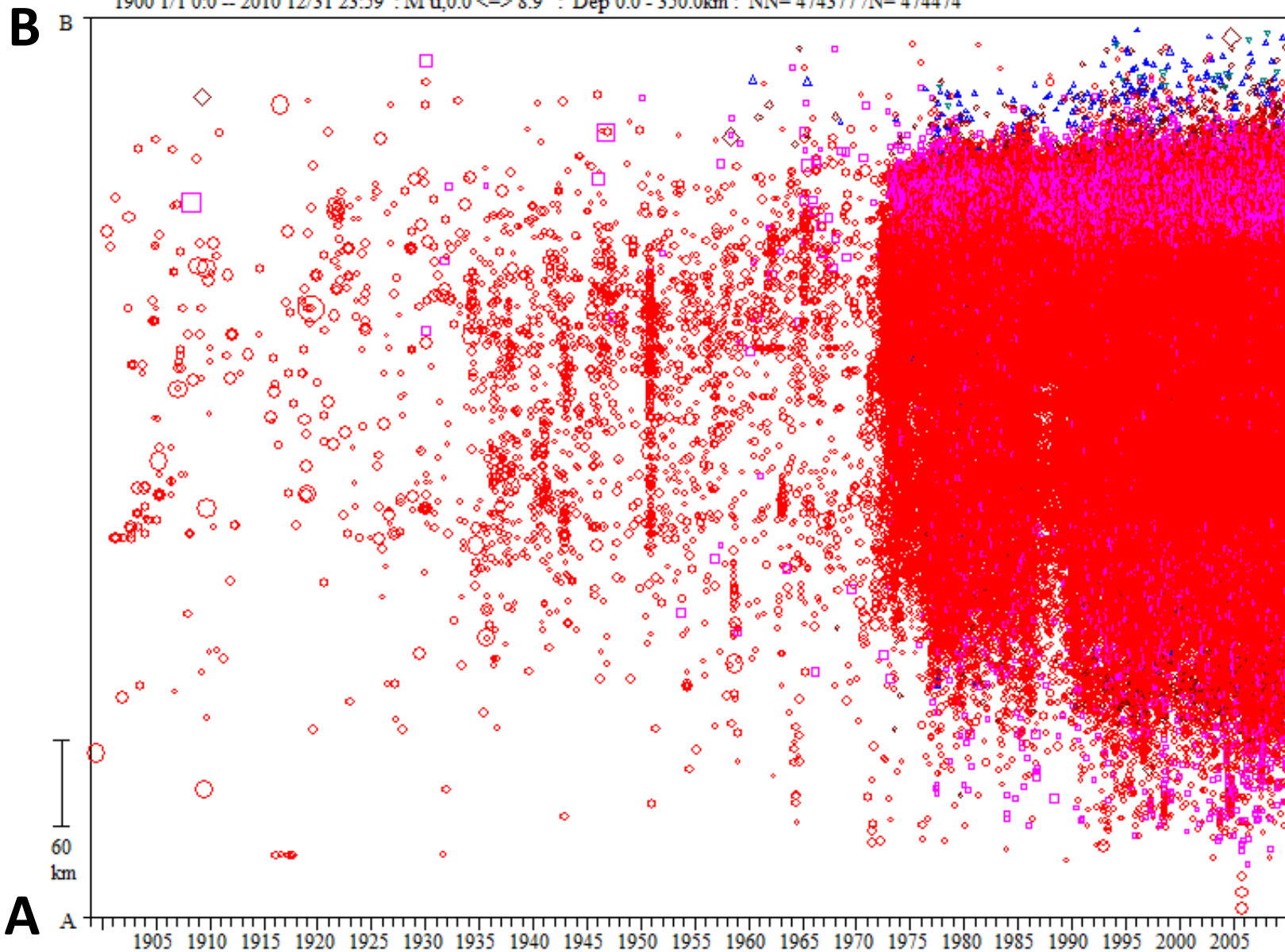
CWB

1900--2010



Time-space

1900 1/1 0:0 -- 2010 12/31 23:59 : $M_u, 0.0 \Leftrightarrow 8.9$: Dep 0.0 - 350.0km : NN= 474377 /N= 474474

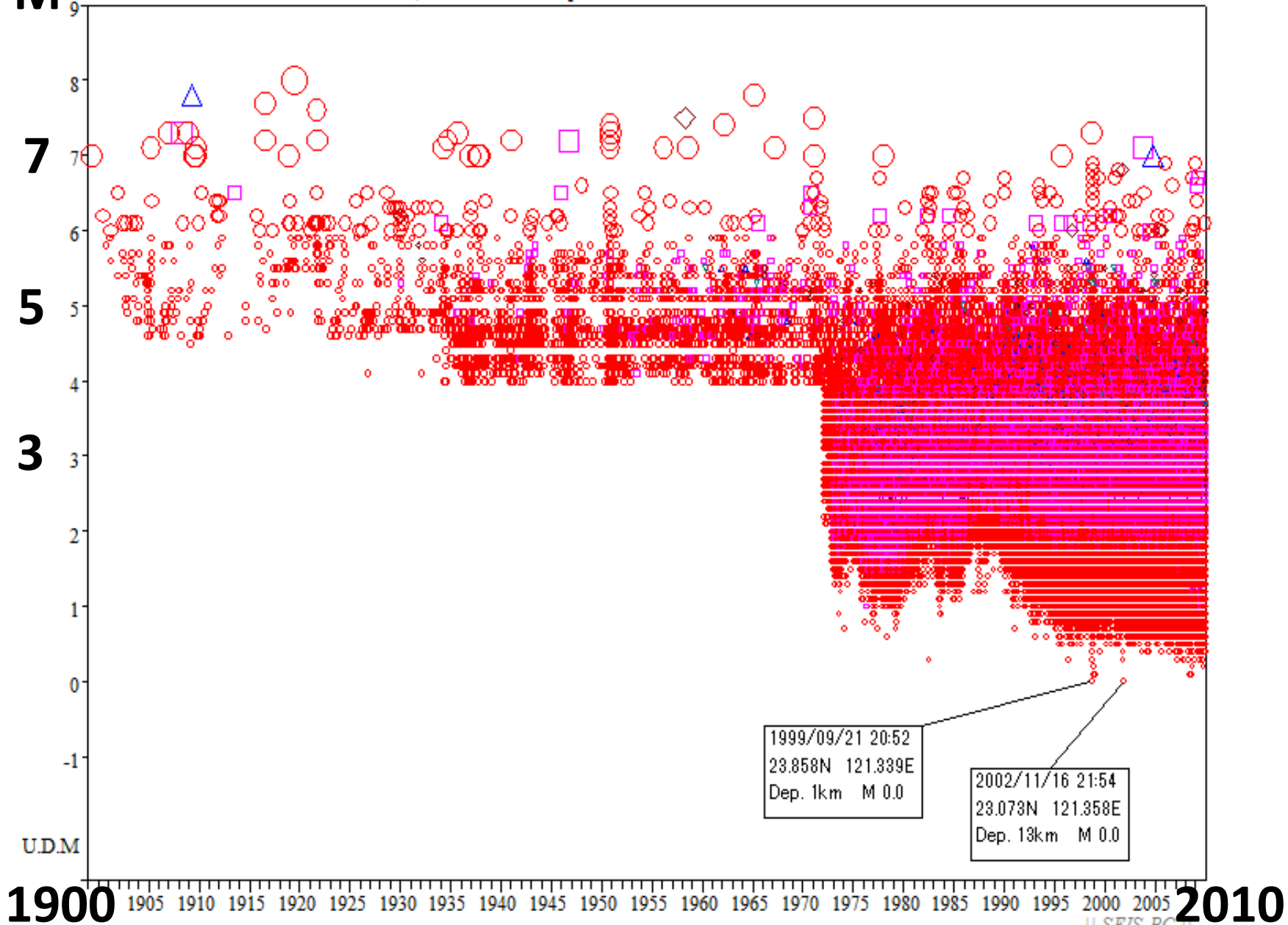


1900

2010

Magnitude-time

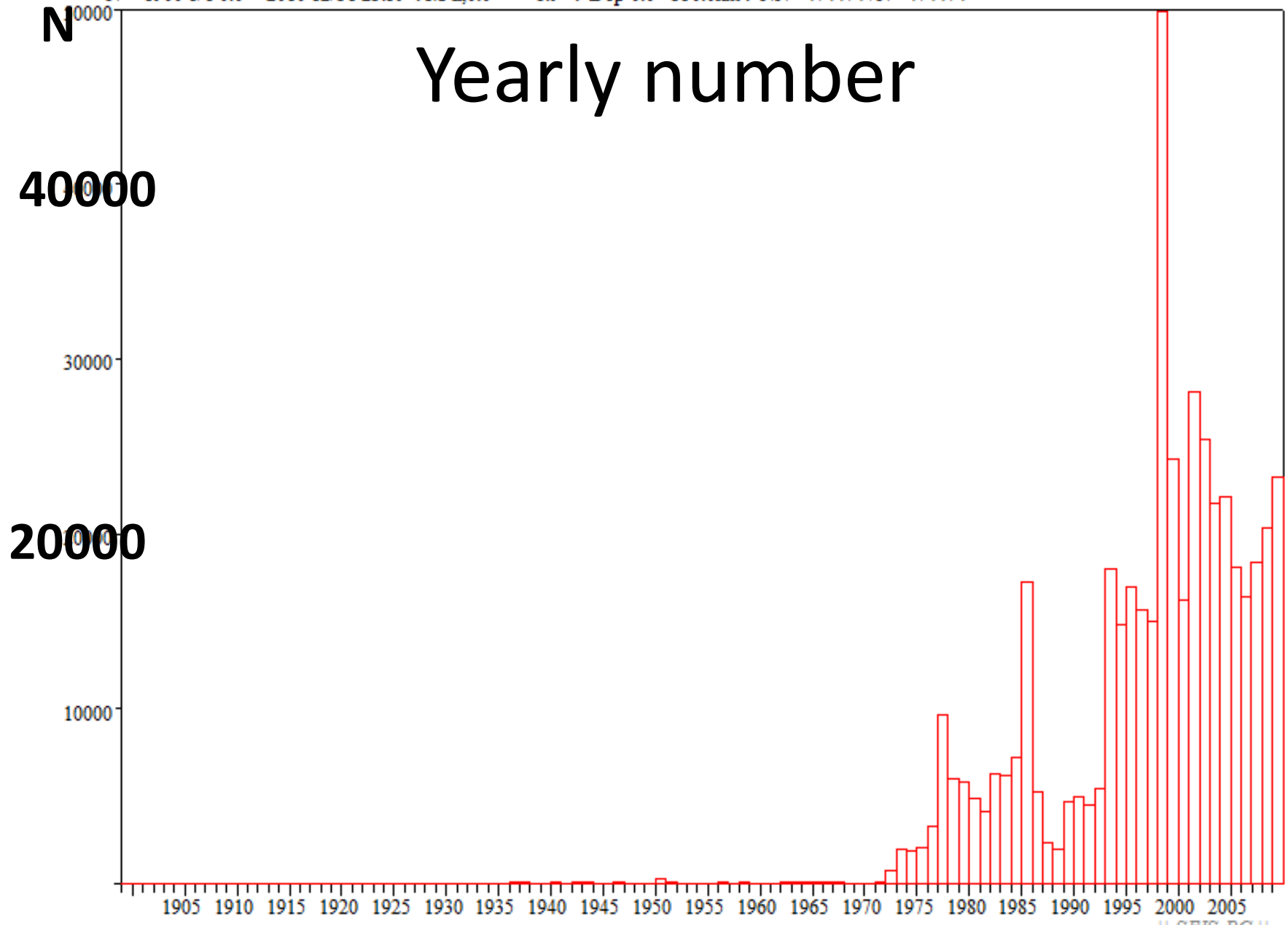
M 1900 1/1 0:0 -- 2010 12/31 23:59 : $M_{u,-1.0} \leq M \leq 8.9$: Dep 0.0 - 300.0km : NN= 474460 /N= 474460



N 1900 1/1 0:0 -- 2010 12/31 23:59 : M u,0.0 <=> 8.9 : Dep 0.0 - 350.0km : NN= 474474 /N= 474474

1999

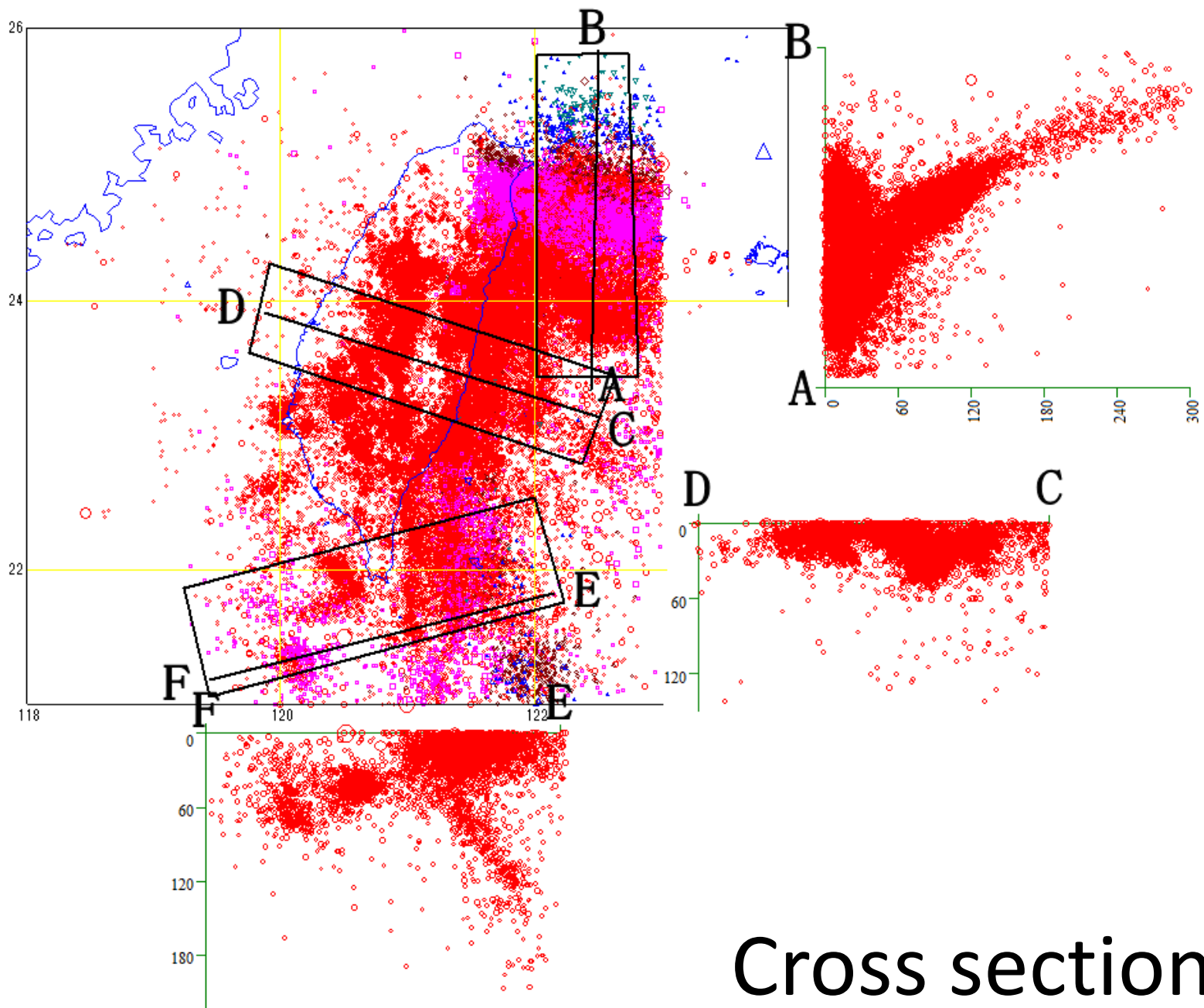
Yearly number



1900

|| SEIS-PC ||

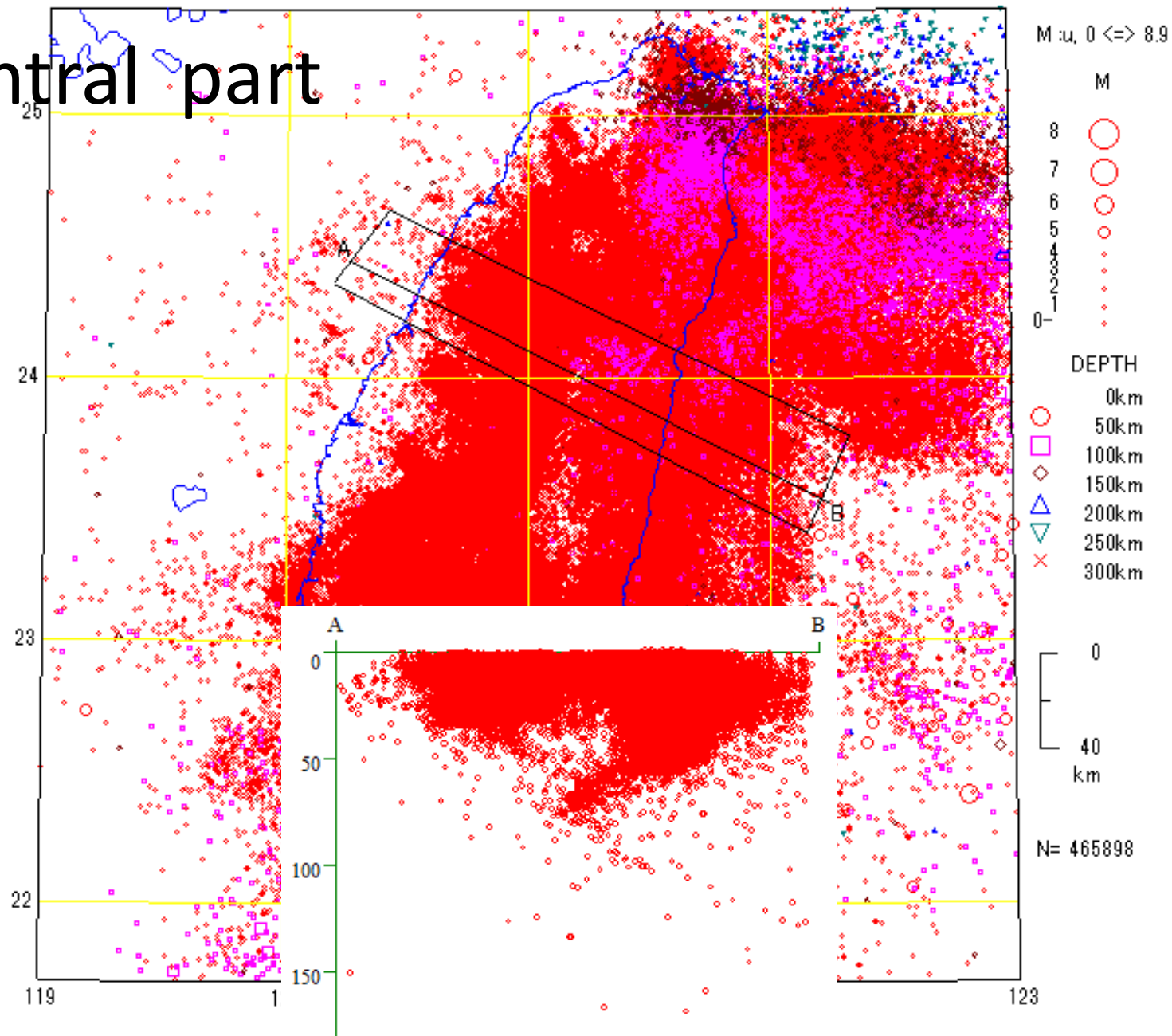
2010



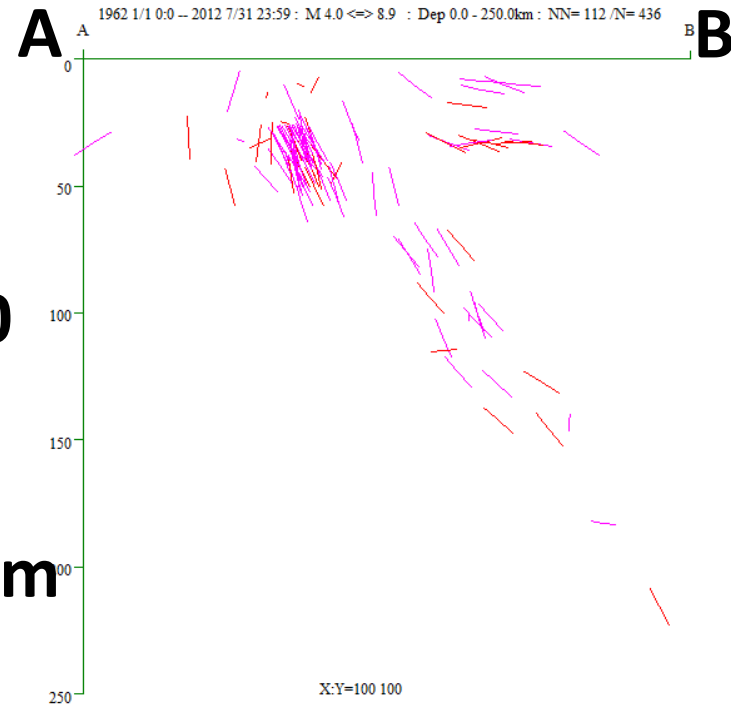
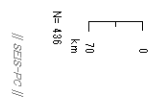
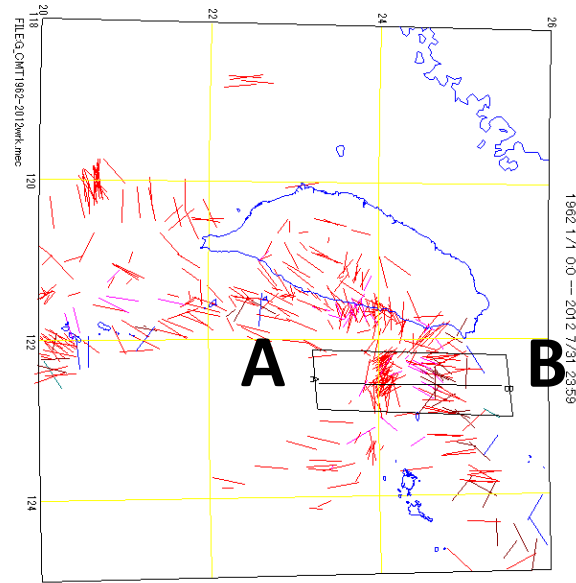
Cross sections

1975 1/1 0:0 -- 2010 12/31 23:59

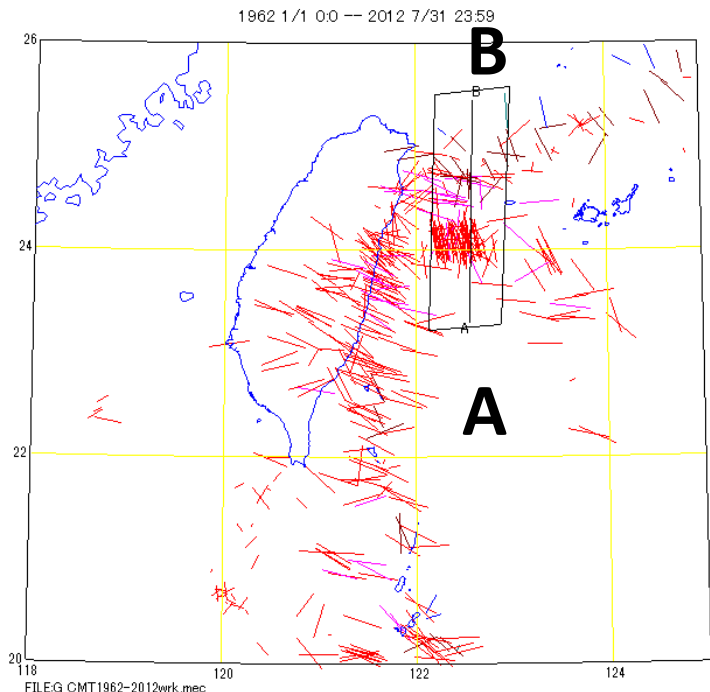
Central part



Cross section of T axes



Cross section of P axes

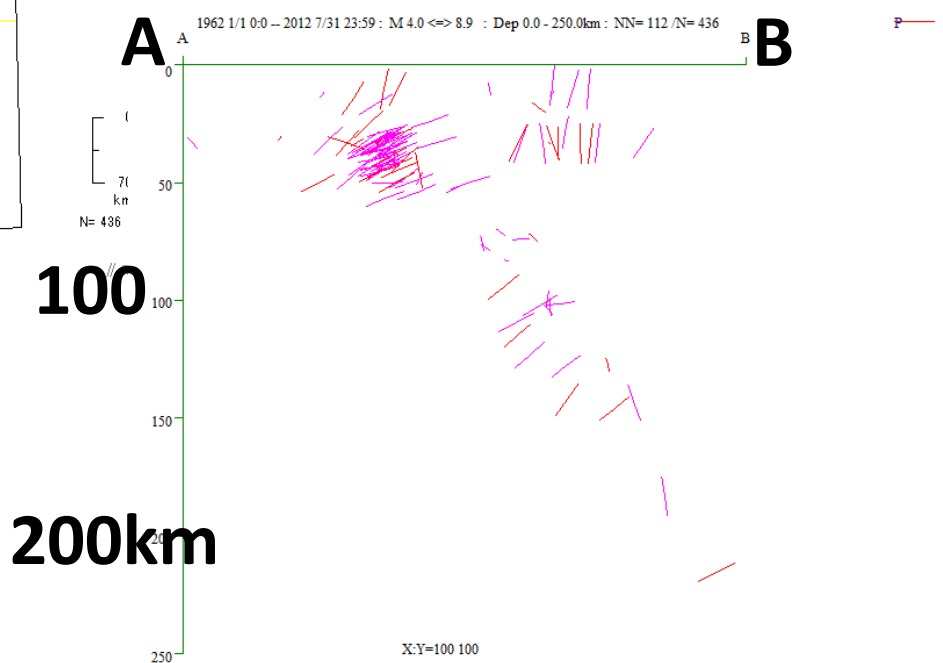


P

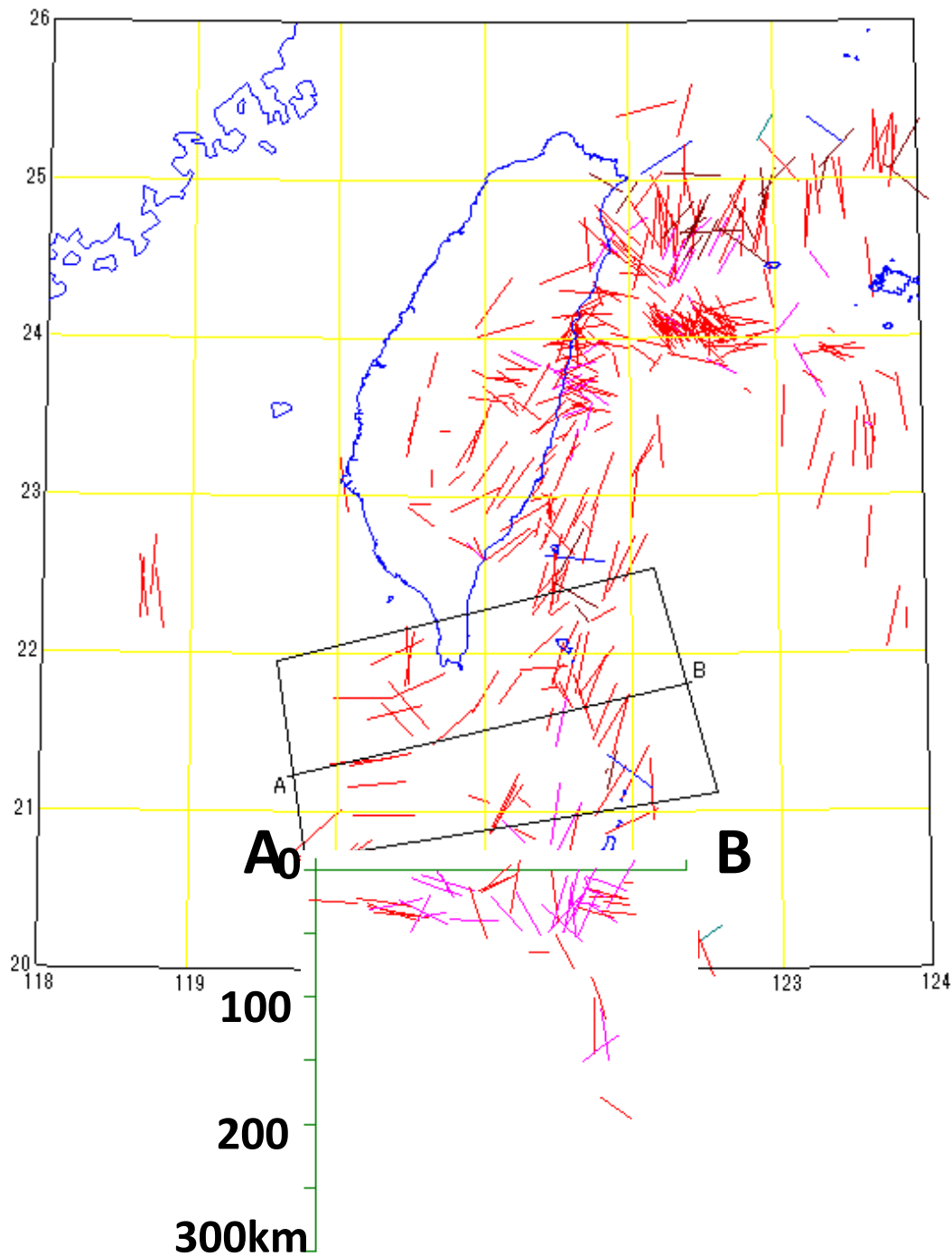
M : 4 <=> 8.9

DEPTH

- 0km
- 50km
- 100km
- 150km
- 200km
- 250km



1962 1/1 0.0 -- 2012 8/31 23:59



T

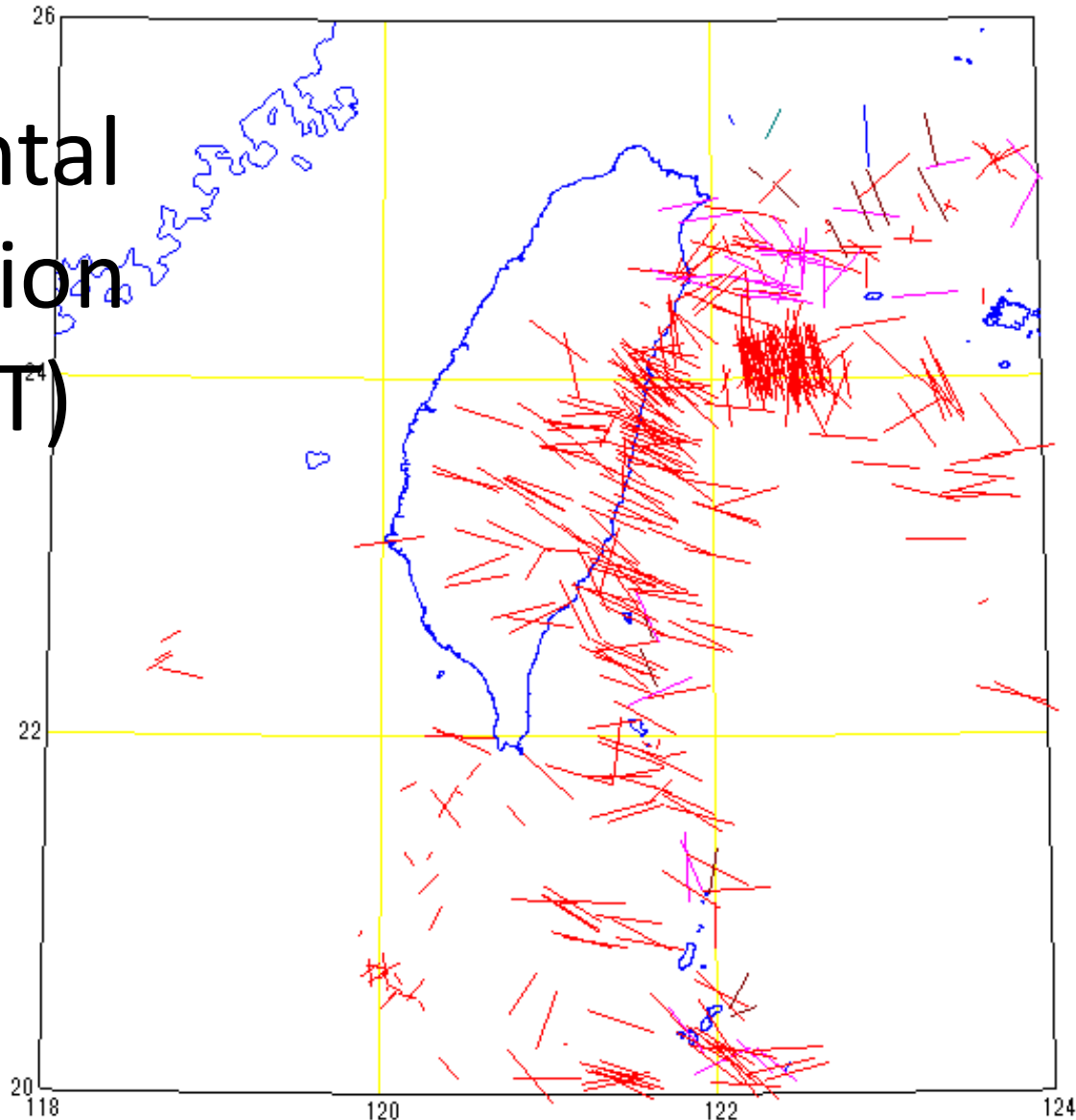
M : 4 <= > 8.9
DEPTH
0km
50km
100km
150km
200km
250km
300km

Cross section of T axes

0
70
km
N= 426

1962 1/1 0:0 -- 2012 7/31 23:59

P
horizontal
projection
(GCMT)



0 degree

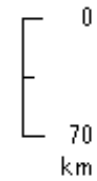
P

M : 4 <=> 8.9

DEPTH

- 0km
- 70km
- 140km
- 210km
- 280km
- 350km

60 degree

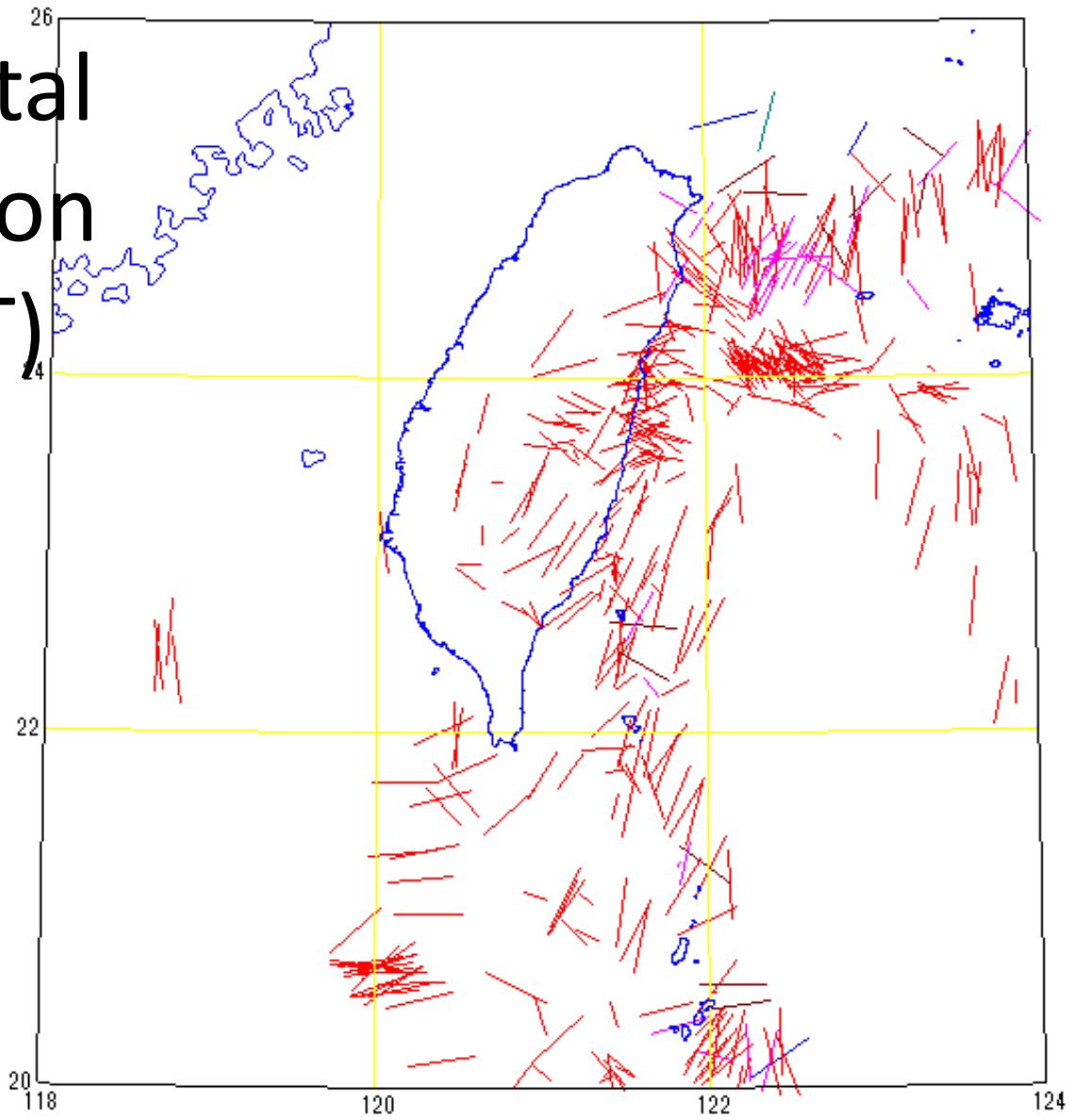


N= 426

// SEIS-PC //

1962 1/1 0:0 -- 2012 7/31 23:59

T horizontal projection (GCMT)



T

M : 4 <=> 8.9

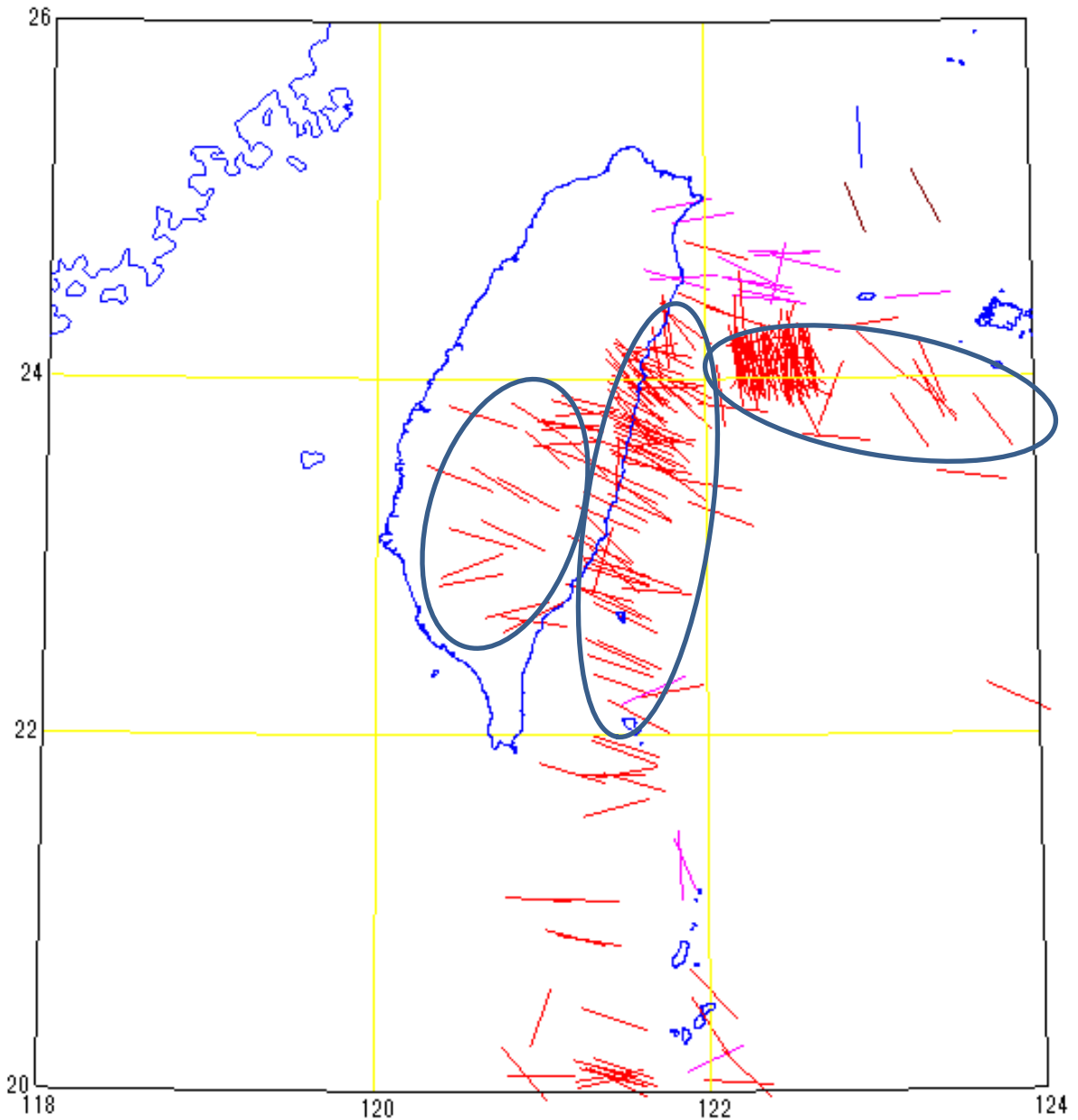
DEPTH

- 0km
- 70km
- 140km
- 210km
- 280km
- 350km

0
70
km
N= 426

Reverse faulting events

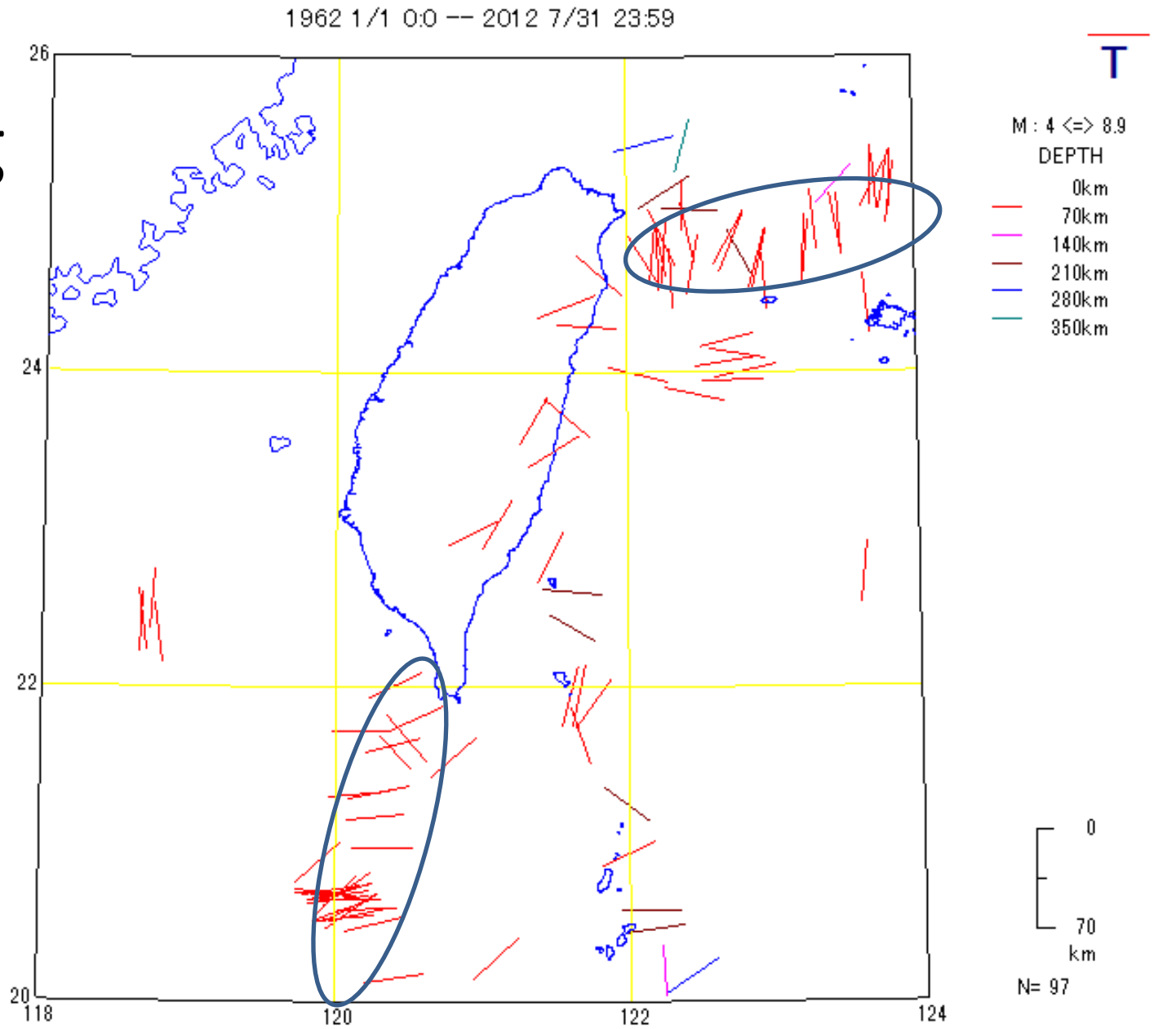
1962 1/1 0:0 -- 2012 7/31 23:59



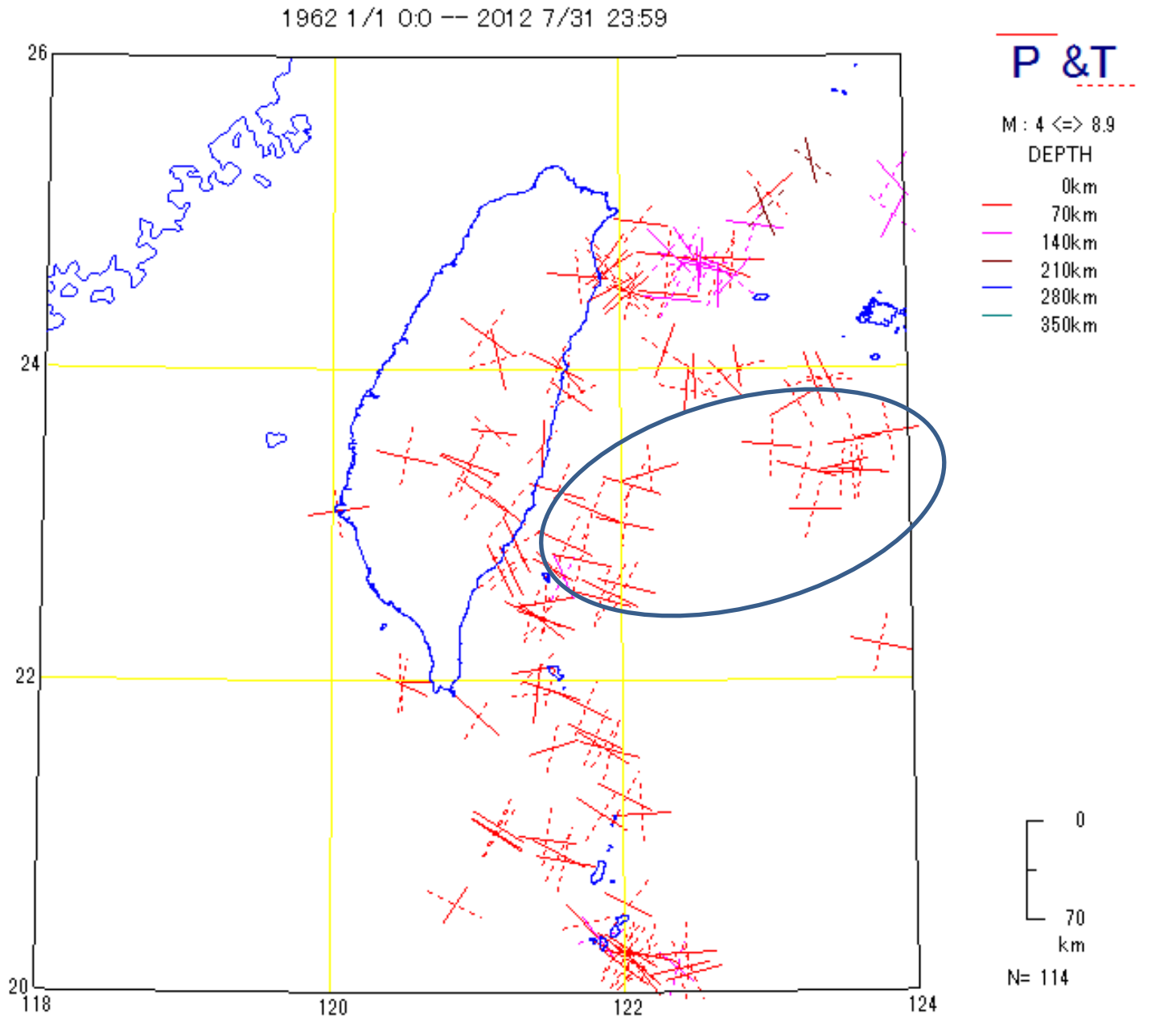
- P**
- M : 4 <=> 8.9
- DEPTH
- 0km
 - 70km
 - 140km
 - 210km
 - 280km
 - 350km

0
70
km
N= 224

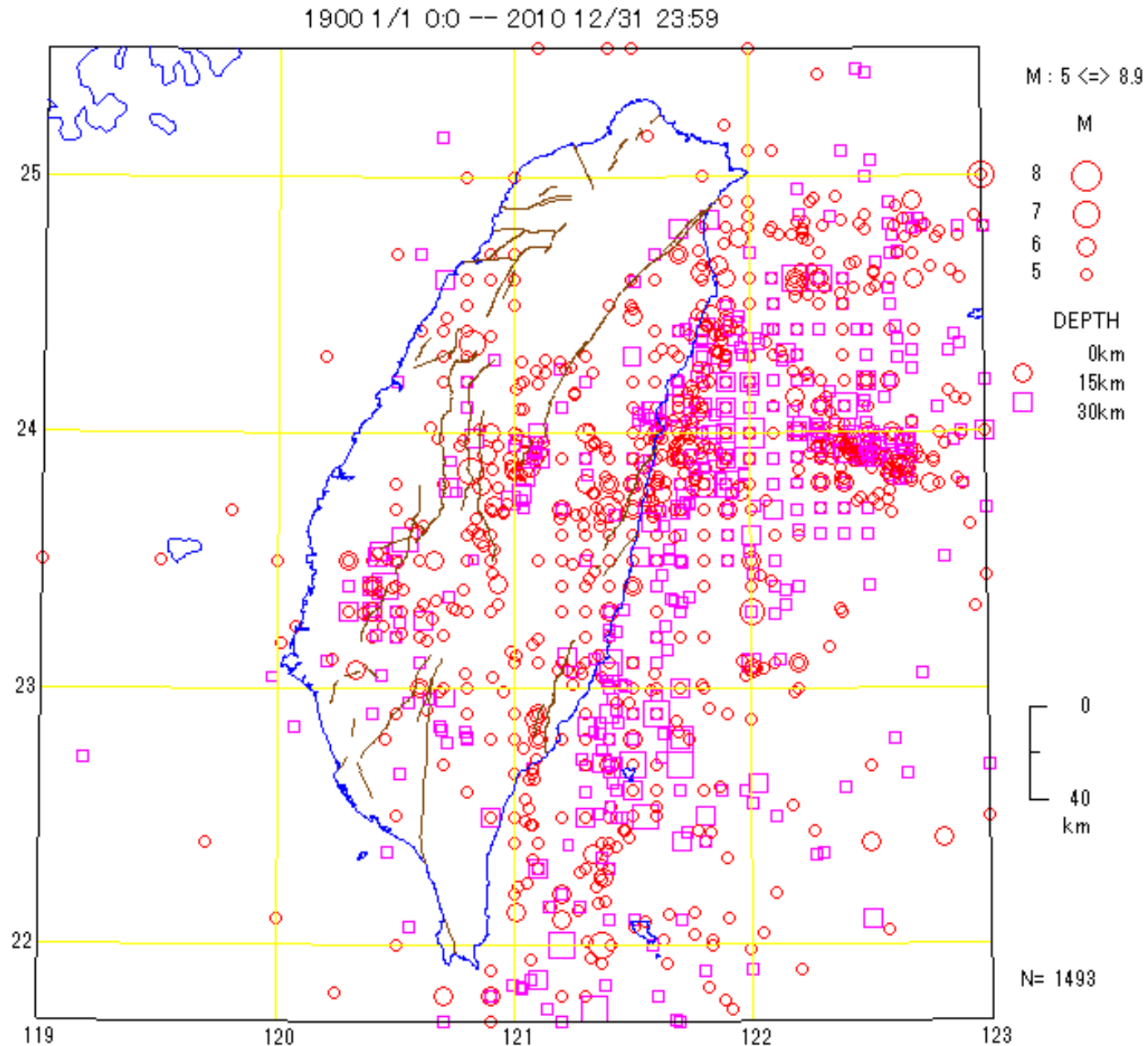
Normal faulting events



Strike slip events



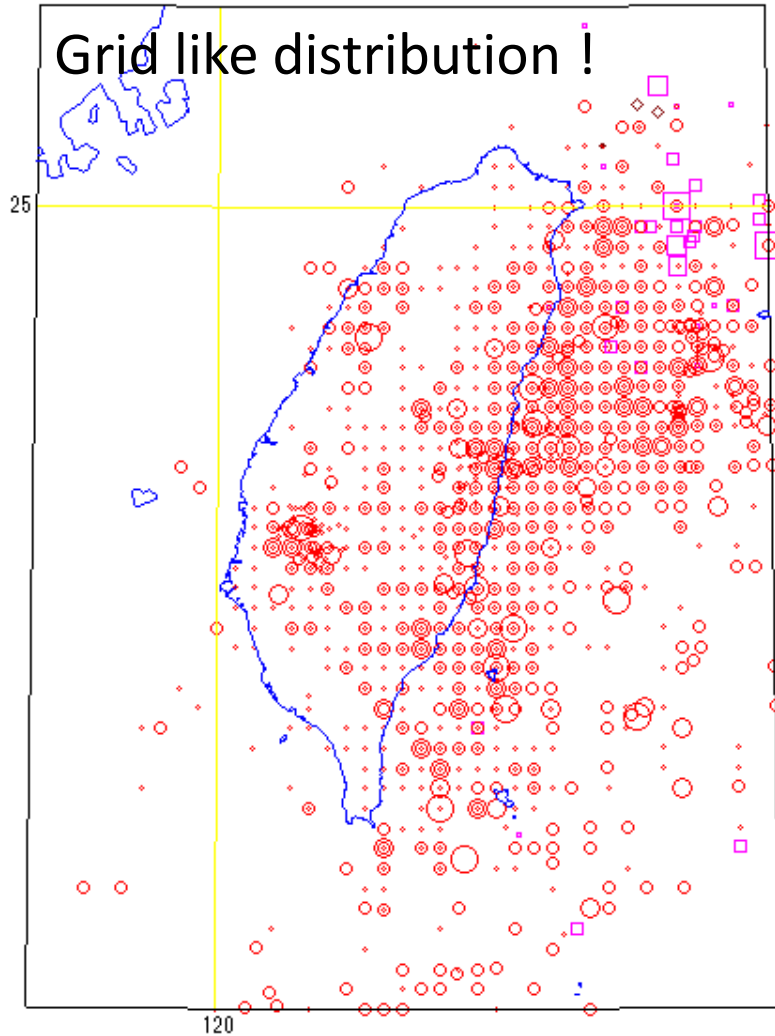
Shallow seismicity and active faults



CWB

1925 1/1 0:0 — 1972 12/31 23:59

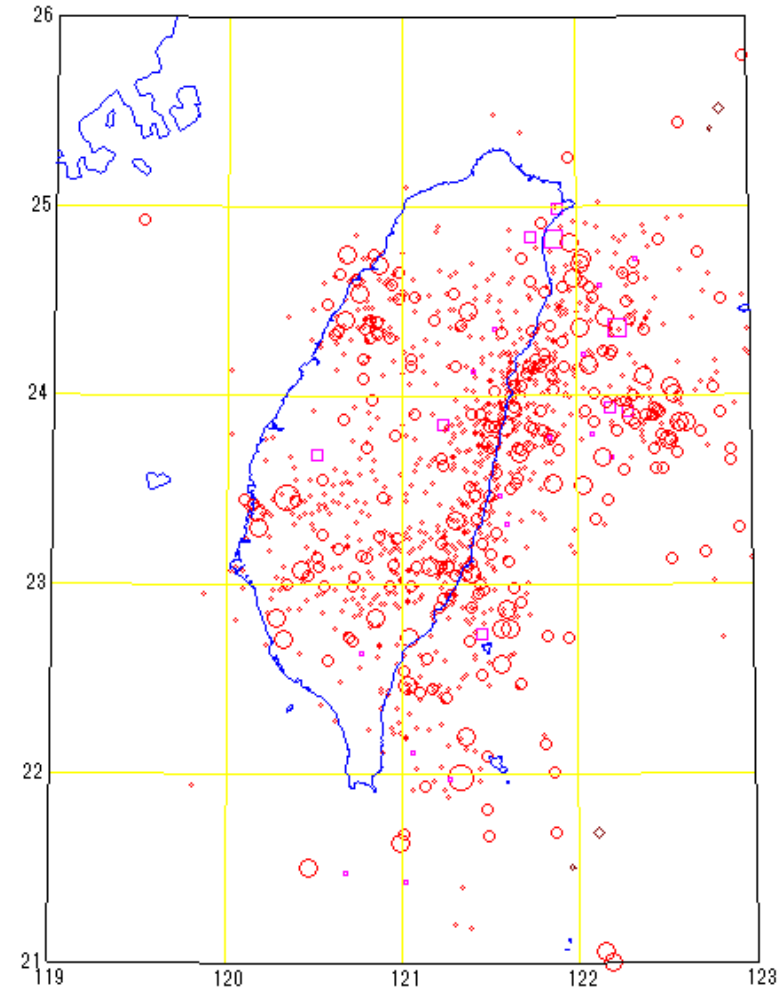
Grid like distribution !



1925-1972

JMA

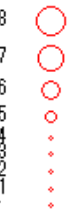
1925 1/1 0:0 — 1944 12/31 23:59



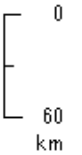
1925-1944

M : u, 0 <=> 8.9

M



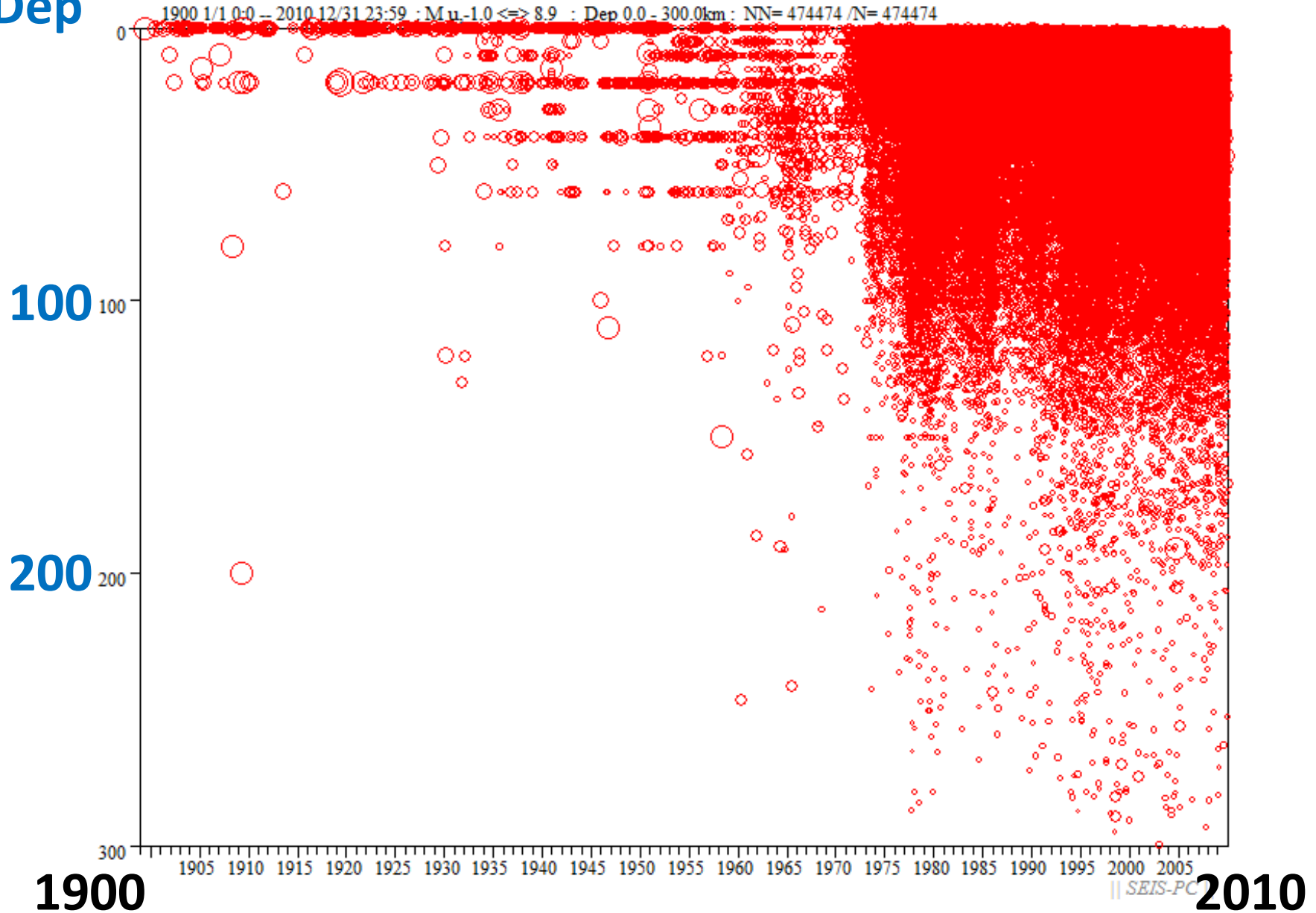
DEPTH



N= 1141

Depth-Time (CWB)

Dep



Conclusion

Most of the plate boundaries in Taiwan is collision.
PHS subducted off northeast Taiwan at 300km depth
and stress of focal mechanism shows down-dip extension.

At middle Taiwan,

a part of PHS subducted and reached at 80km depth.

At south Taiwan,

EUR subducted under PHS at 200km depth.

In the CWB catalog,

hypocenters must be re-determined before 1973.

*Thank you
for
your attention!*

