REDUCTION OF THE ECONOMIC–FINANCIAL EXPOSURE OF THE STATE AND PROTECTION OF HUMAN LIVES

MODELS FOR THE PREVENTION AND MITIGATION OF DAMAGES TO PEOPLE AND PROPERTIES THROUGH AN INSURANCE COVERAGE

PRESENTATION

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REFERENCE INSTITUTE: Geophysics Department, Aristotle University of Thessaloniki

3/14/2014

Info–day, Rome 13.03.2014

Introducing Geophysics Department

- Belongs to School of Geology, Faculty of Exact Sciences, Aristotle University of Thessaloniki

- Maintains 40 seismological stations – member of the Hellenic Unified Seismological Network – routine analysis 24h/day, 7d/w

- Staff: 14 professors at 4 levels, 15 members of technical staff with 8 of them Drs of Seismology

- Teaching: 15 courses in School of Geology, Physics and Mathematics

3/14/2014

Introducing myself

- ☐ Degree of Geology
- ☐ PhD of Seismology
- ☐ Member of Geophysics Department since 1983 – Full Professor since 2001
- ☐ Publications: >150
- ☐ References: >1000
- ☐ Scopus results: publ.:85, h–i.:14 (excl. all authors citations)
- ☐ Source parameters, seismotectonics, stress field, seismic hazard

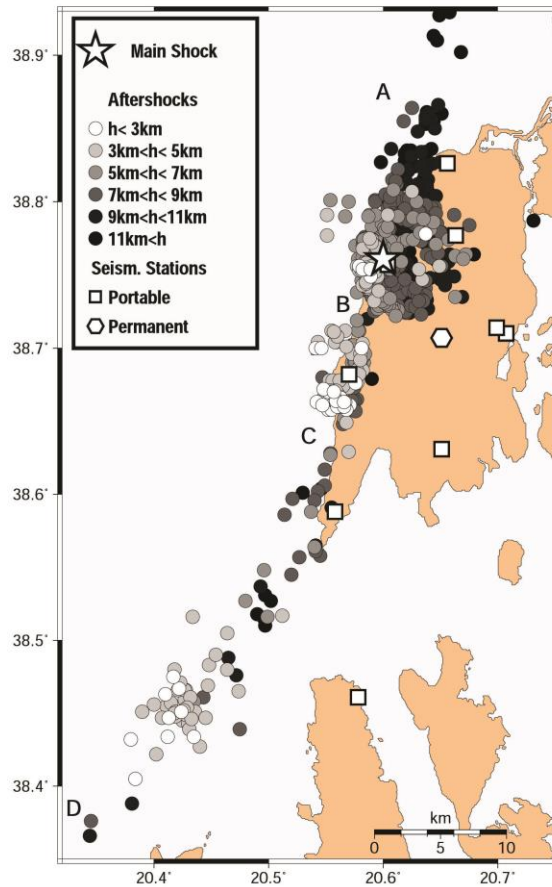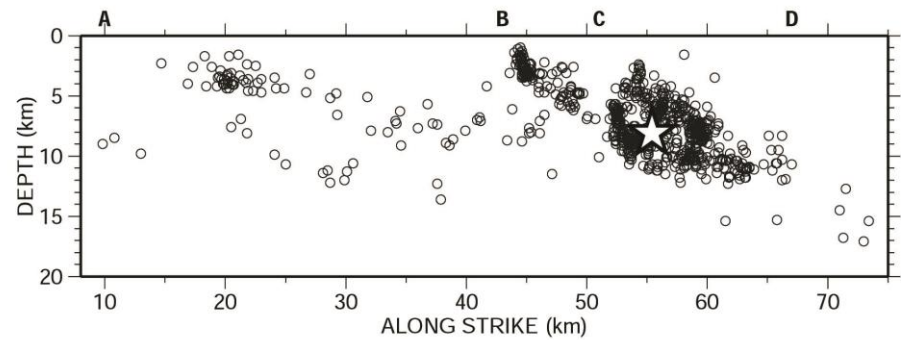# Central Ionian Islands area
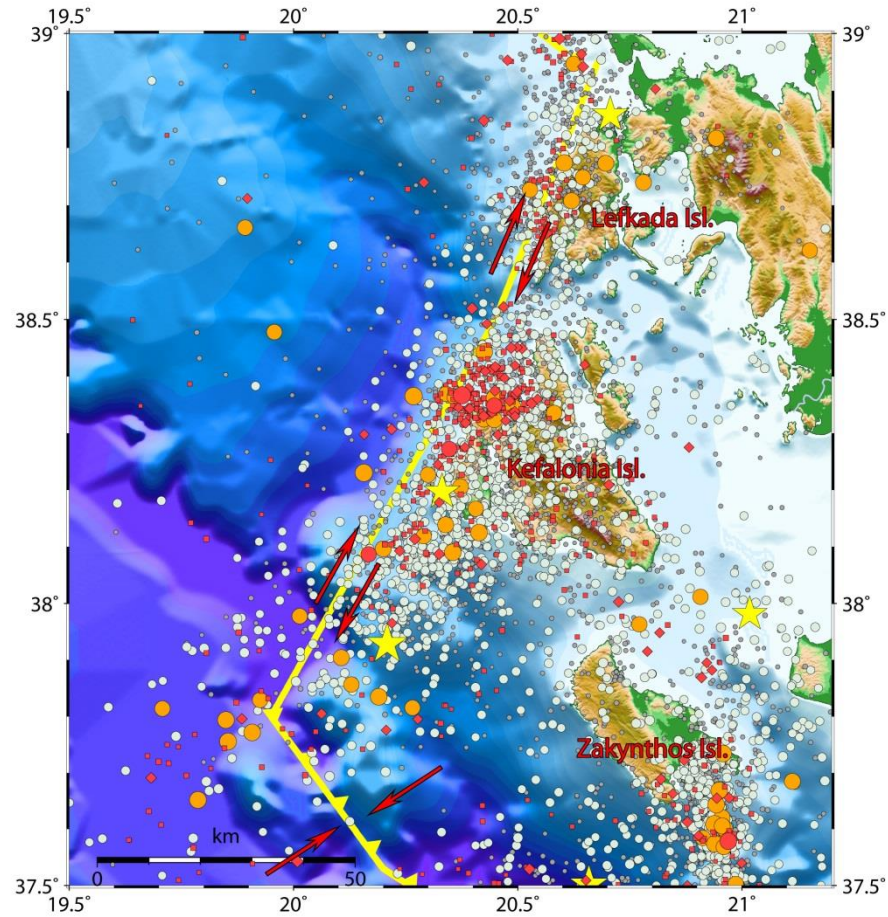
2003 Lefkada seismic sequence

Fig. 2

Fig. 3

Stress transfer – Seismicity triggering

Seismicity was triggered to one dimension mainly – evidencing the preference to the faulting type

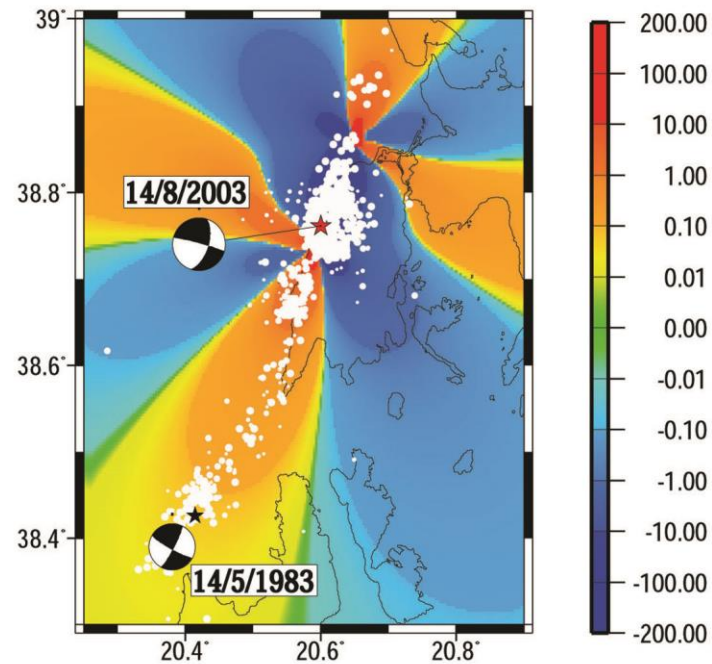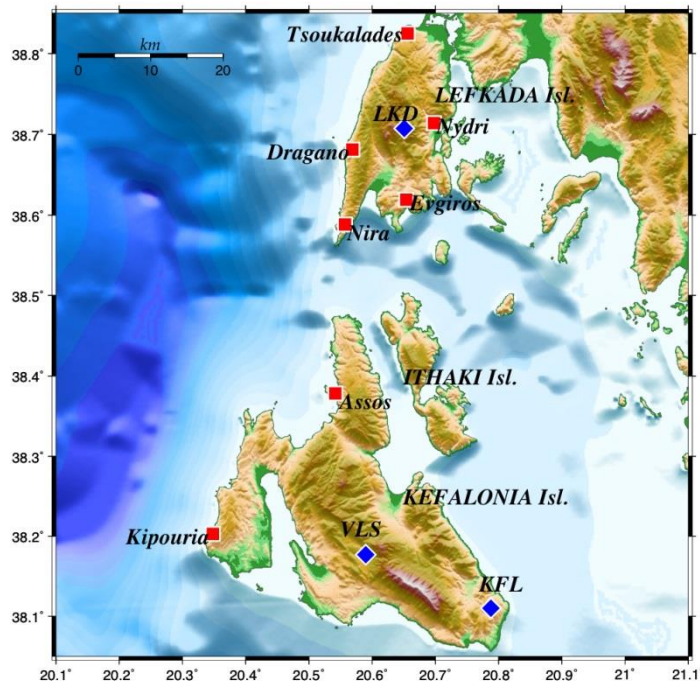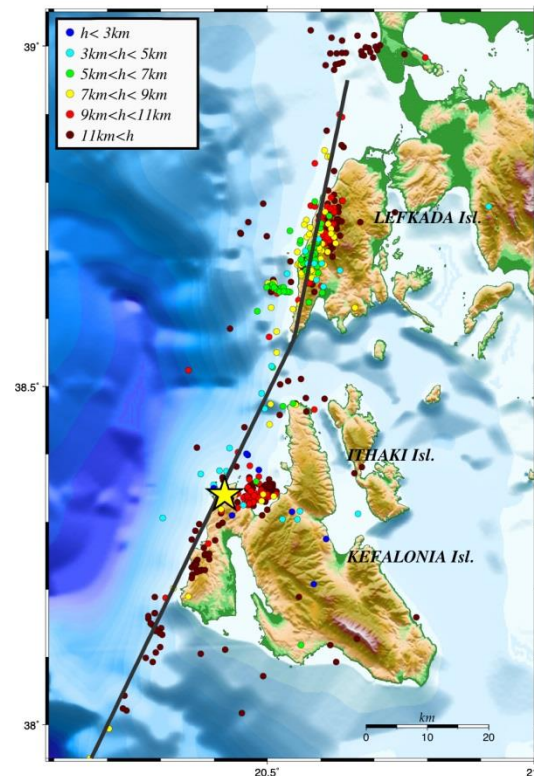Fig. 6

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Deployment of a local network

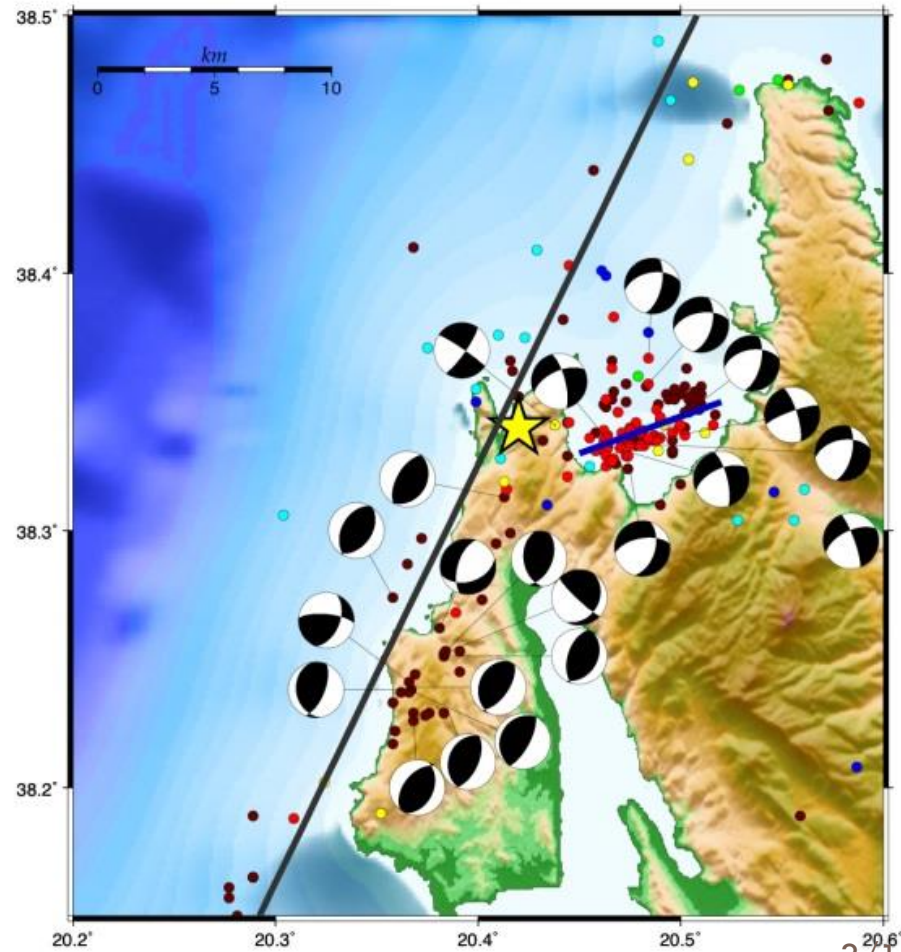**Local network in Lefkada & Kefalonia Islands**

Relocated seismicity (location accuracy criteria)

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Identification of geometry and kinematics of activated segments
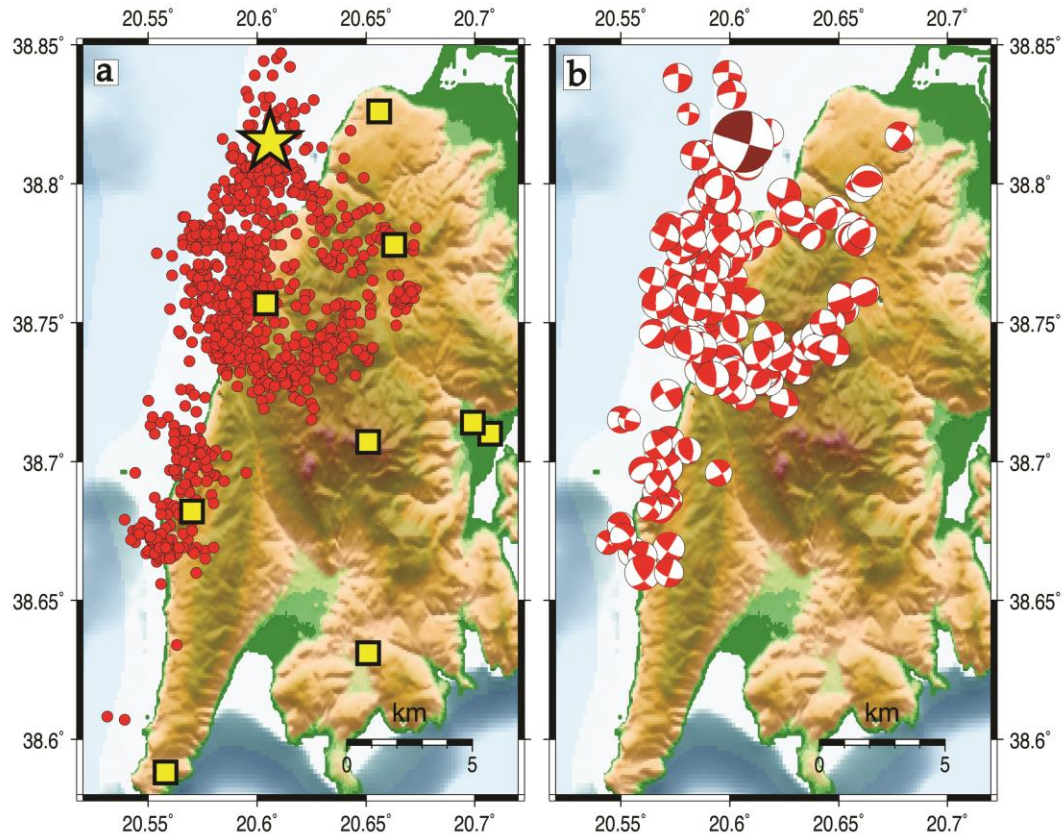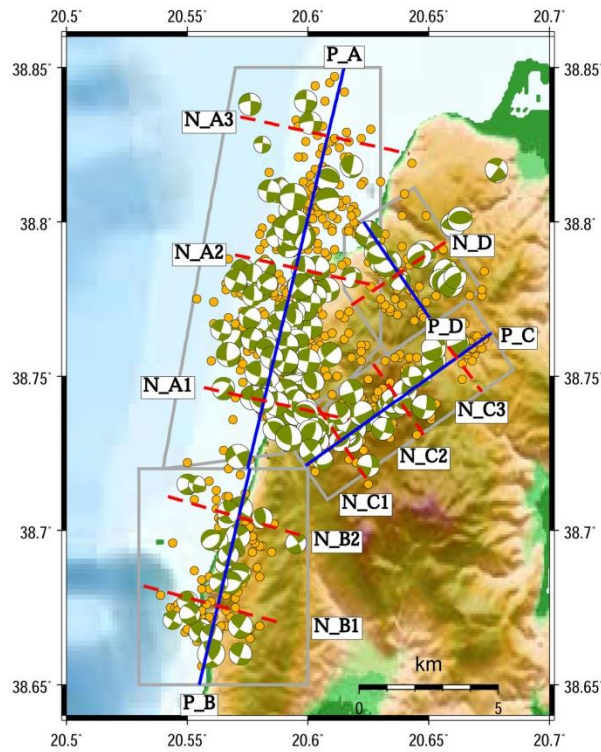
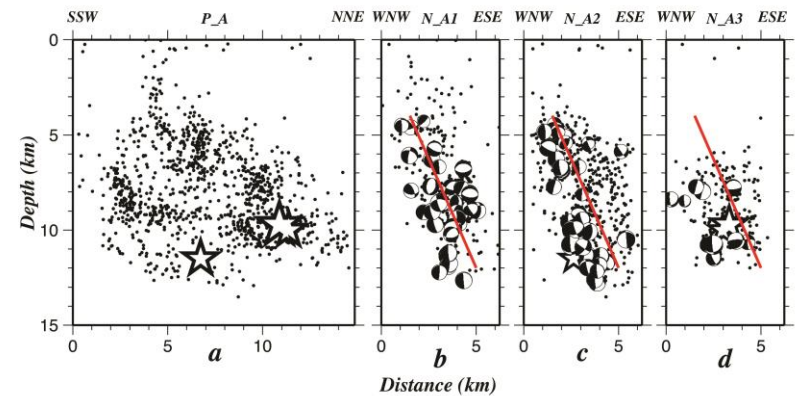

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Detailed microseismicity study

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Identification of fault network – properties

Seismicity along with fault plane solutions
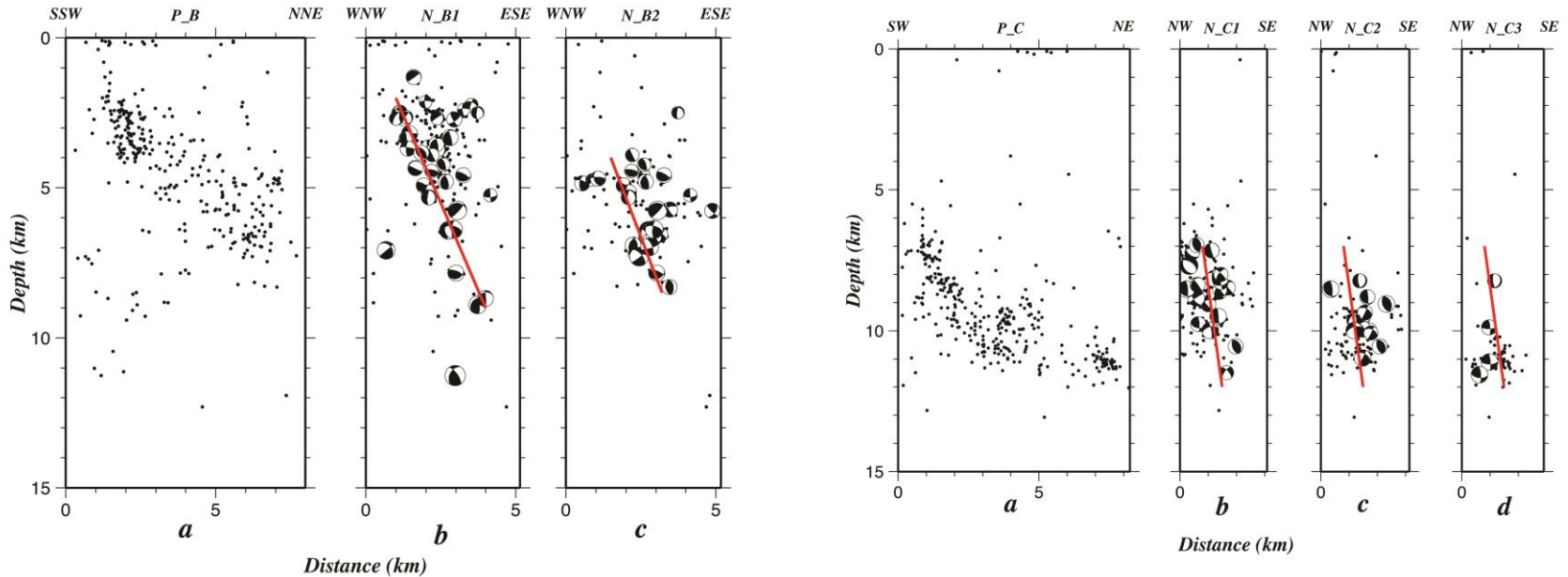
Cross sections perpendicular to the strike of the major rupture

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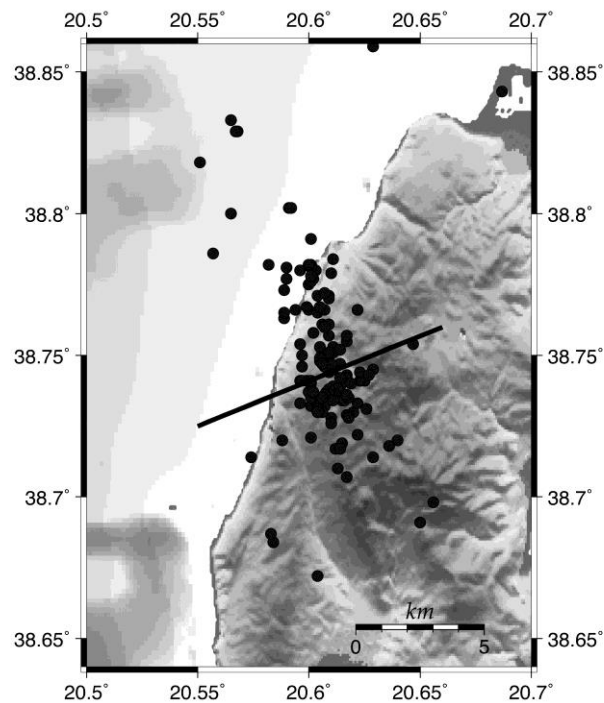# Identification of fault network – properties

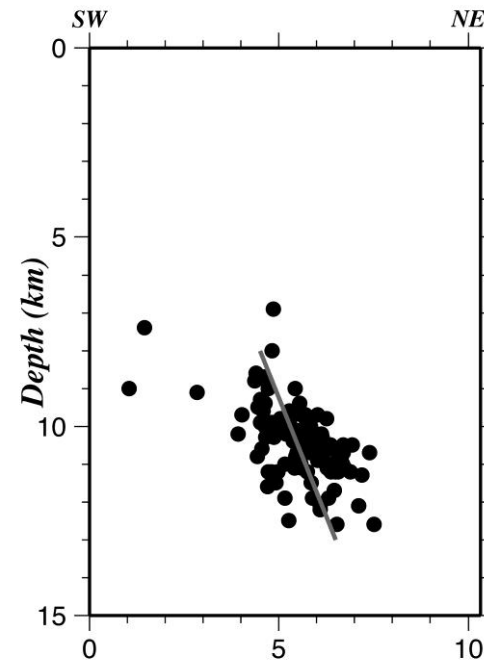# Identification of fault network – properties

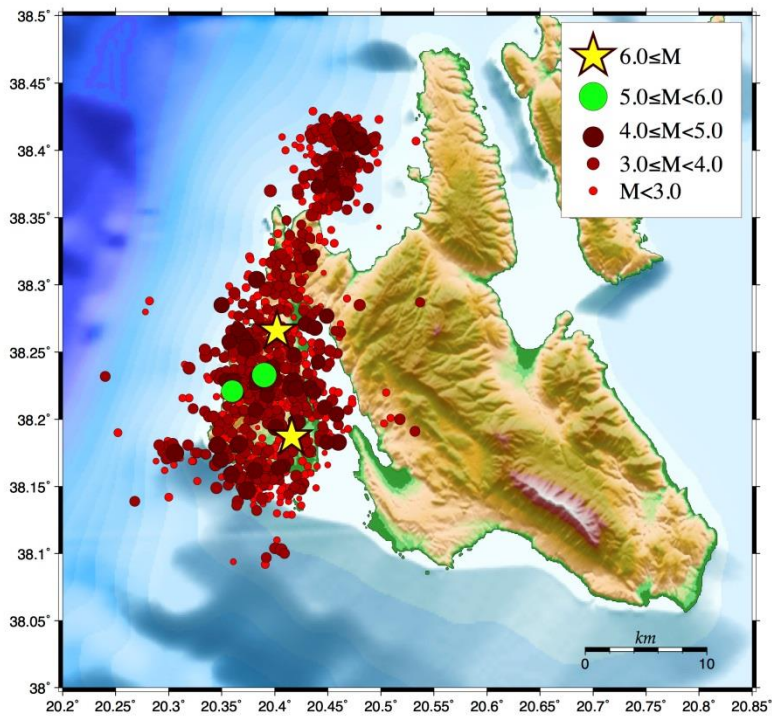1994 swarm – epicentral distribution
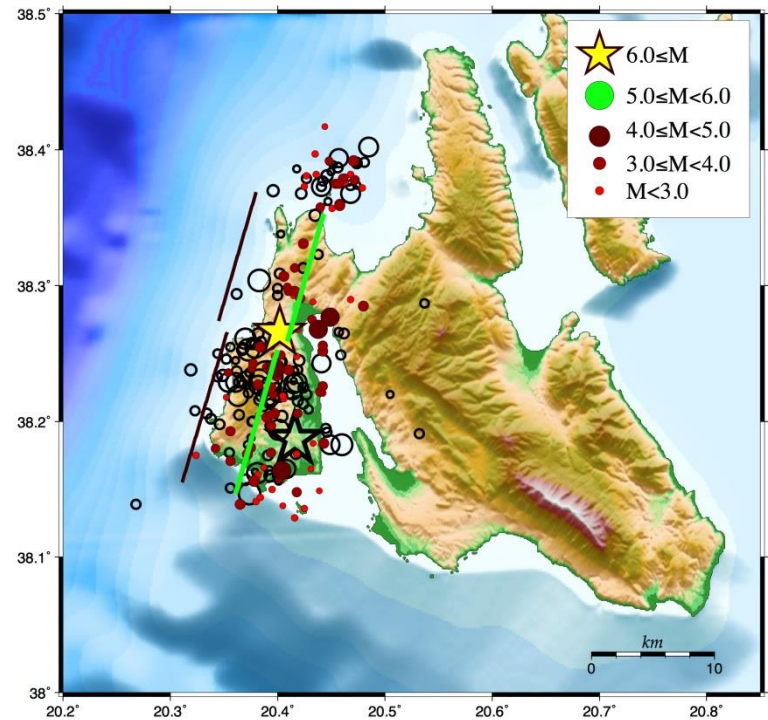
Strike normal cross section

2014 Kefalonia seismic sequence

Aftershock distribution

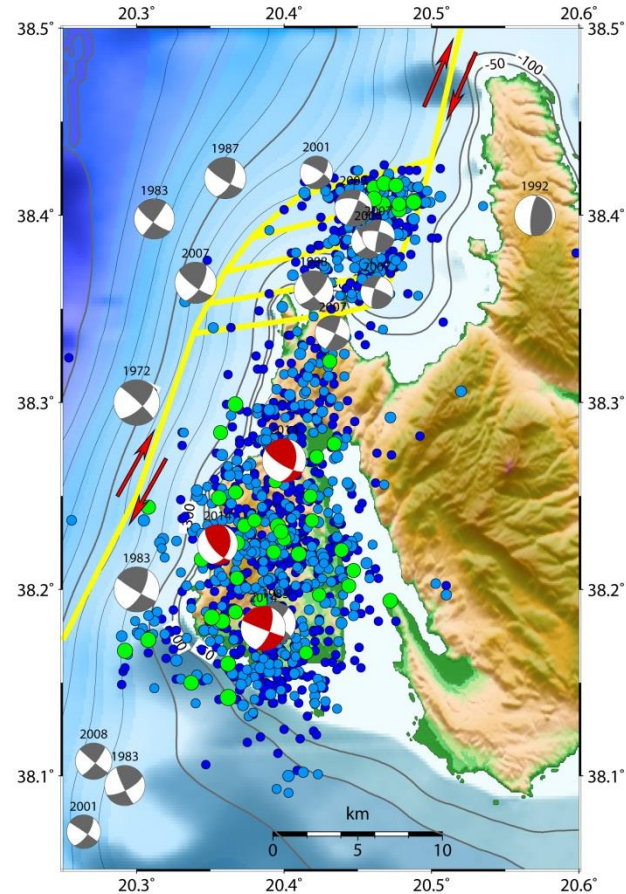**Definition of the major activated segments**

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2014 Kefalonia seismic sequence

Definition of geometry and kinematics of the active boundary

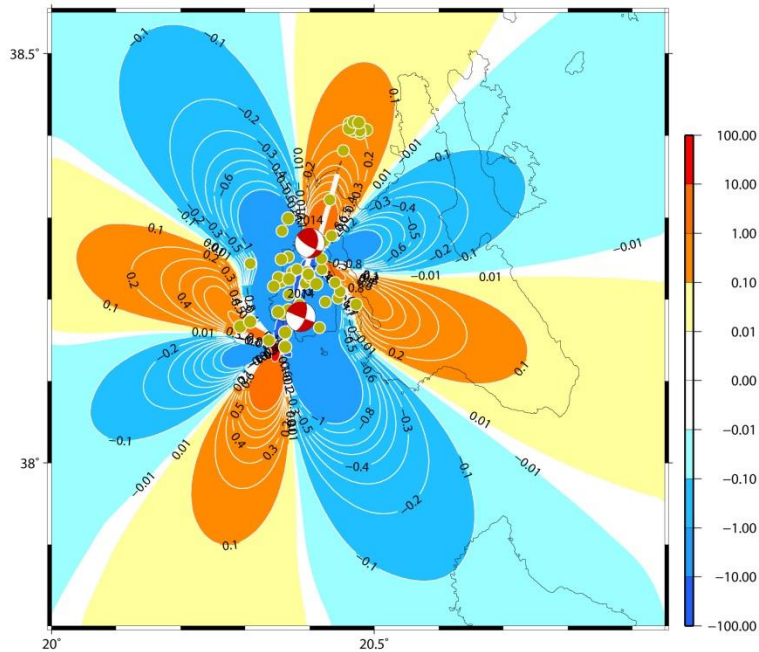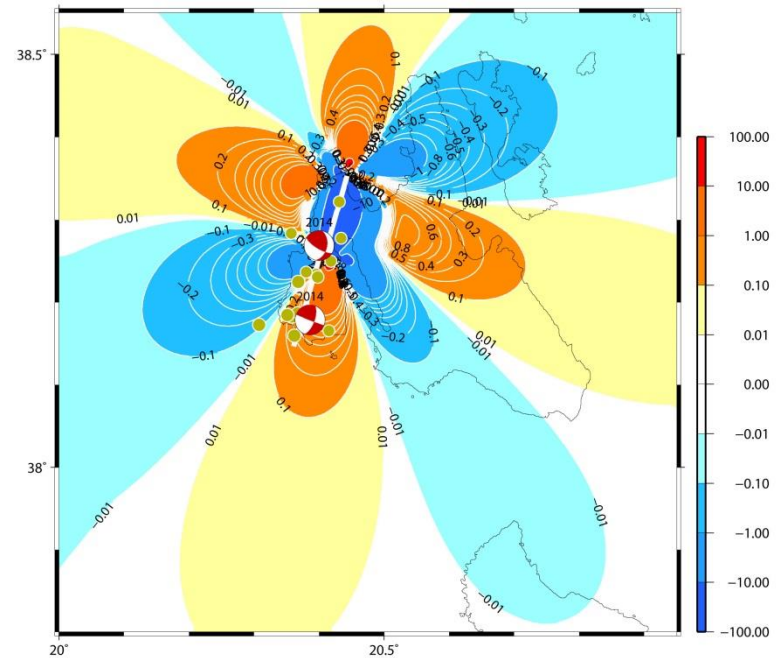Significance for rupture extent

Maximum expected magnitude earthqhuake

2014 Kefalonia seismic sequence

Static stress changes after the 1st main shock (26/1/2014)

Static stress changes after the 2nd main shock (3/2/2014)

Added value: Input for seismic risk mitigation

- Identification of active structures
- Definition of their geometry and kinematics
- Definition of their seismic potential
- Description of fault network
- Definition of rupture extent – maximum expected magnitude earthquake
- Multiple segments activation – expected triggering
- Multisegmented ruptures

Thank you for your attention

3/14/2014