

**10-14 December 2007,
Monday - Friday**

**Moscone West, 800 Howard
Street**

**Moscone South, Howard
Street (between 3rd and
4th streets)**

[About Paper Numbers](#)

San Francisco, CA, USA

[Program & Abstracts](#)

PROGRAM SUMMARIES - Browse session details and abstracts

- [Union \[U\]](#)
- [Atmospheric Sciences \[A\]](#)
- [Atmospheric and Space Electricity \[AE\]](#)
- [Biogeosciences \[B\]](#)
- [Cryosphere \[C\]](#)
- [Earth and Space Science Informatics \[IN\]](#)
- [Education and Human Resources \[ED\]](#)
- [Geodesy \[G\]](#)
- [Geomagnetism and Paleomagnetism \[GP\]](#)
- [Global Environmental Change \[GC\]](#)
- [Hydrology \[H\]](#)
- [Mineral and Rock Physics \[MR\]](#)
- [Near-Surface Geophysics \[NS\]](#)
- [Nonlinear Geophysics \[NG\]](#)
- [Ocean Sciences \[OS\]](#)
- [Paleoceanography and Paleoclimatology \[PP\]](#)
- [Planetary Sciences \[P\]](#)
- [Public Affairs \[PA\]](#)
- [Seismology \[S\]](#)
- [SPA-Aeronomy \[SA\]](#)
- [SPA-Solar and Heliospheric Physics \[SH\]](#)
- [SPA-Magnetospheric Physics \[SM\]](#)
- [Study of the Earth's Deep Interior \[DI\]](#)
- [Tectonophysics \[T\]](#)
- [Volcanology, Geochemistry, Petrology \[V\]](#)



1340h

S13C-1438 [Abstracts]

Contribution of seismic arrays to earthquake early warning in Greece: Preliminary results for the Gulf of Corinth test site

* **Voulgaris, N**

voulgaris@geol.uoa.gr

Department of Geophysics, University of Athens, Faculty of Geology and Geoenvironment, Panepistimiopolis, Zografou, Athens, 15784, Greece

Makropoulos, K

kmacrop@geol.uoa.gr

Department of Geophysics, University of Athens, Faculty of Geology and Geoenvironment, Panepistimiopolis, Zografou, Athens, 15784, Greece

An experimental small-aperture array of 4 elements (TRISAR) was installed in July 2003 in central Peloponnese, in order to investigate the contribution of arrays to earthquake location in Greece. Data analysis was based on the software developed and provided by NORSAR in order to simulate real-time processing followed by analyst review. The resulting earthquake locations were compared with those of conventional seismographic networks in order to quantify location errors, evaluate array performance and investigate enhancement possibilities. Analysis revealed that array performance in terms of event location is restricted by its very small aperture and limited number of sensors. Furthermore, detailed investigation of errors in automatic location results suggests structural and local geology effects. The possibility to automatically correct for systematic deviations was verified. However, future research with an extended array configuration was deemed necessary in order to provide clearer results by reducing phase misidentifications and wrong groupings made by the automatic algorithm, resulting from the poor slowness resolution of the array in its initial configuration. The opportunity to continue research on seismic array implementation for near-real time earthquake location as part of an early warning system presented itself within the framework of the SAFER project funded by EU. Following the detailed assessment of the initial results, the number of elements of the TRISAR array was increased to 7 and the geometry was modified in order to maximize resolution and performance focusing in the area of the Gulf of Corinth. This area, where optimum array performance was previously observed, has already been selected as one of the project test sites. Data processing will once again be carried out in real-time simulation mode while earthquake location results will be compared with those from a dense local network installed around the test-area. In addition, a second 4 element small-aperture array is installed in the Atalanti area (ATASAR), at a similar distance from the test site as TRISAR, in order to improve the accuracy of array-based earthquake location. Data telemetry will provide the basis for the implementation and testing of real-time processing during the operation of this second array. The preliminary results obtained during the first months of operation of the 2 arrays will be presented and discussed.

7200 SEISMOLOGY

7219 Seismic monitoring and test-ban treaty verification

7294 Seismic instruments and networks (0935, 3025)

Seismology [S]

2007 Fall Meeting