

BULETINI I TËRMETEVE TË RRJETIT SIZMOLOGJIK SHQIPTAR

MAJ 2013

PARAMETRIC DATA
AND ALBANIAN'S EARTHQUAKE ANALYSIS
MAY 2013



UNIVERSITETI POLITEKNIK I TIRANËS
INSTITUTI I GJEOSHKENCAVE, ENERGJISË, UJIT DHE MJEDISIT
Departamenti i Sizmologjisë

BULETINI MUJOR I RRJETIT SIZMOLOGJIK
TË SHQIPERISË

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INFORMACION I PERGJITSEM**Prezantim**

Buletini i Rrjetit Sizmologjik Shqiptar është një publikim periodik i parametrave valore, parametrave vatrore dhe madhësisë së tërmeteve brenda territorit të Shqipërisë dhe rrotull saj, përpiluar nga Departamenti i Sizmologjisë i Institutit të Gjeoshkencave, Energjisë, Ujit dhe Mjedisit pranë Universitetit Politeknik të Tiranës.

Parametrat e vlerësuar i referohen kuadrantit gjeografik të kufizuar nga koordinatat: 39.0° - 43.0° V dhe 18.5° - 21.5° L.

Buletini përmban pjesën shpjeguese të përbërë nga informacioni i përgjithshëm, simbolet e përdorura për parametrat e vlerësuar, të dhënat fazore valore për secilin nga tërmetet e regjistruar dhe përpunuar, katalogu mujor i tërmeteve, informacionin makrosimik, statistikor, mekanizmin vatrore dhe hartën e shpërndarjes së epiqendrave. Në të përfshihen disa kategori tërmetesh, bazuar në informacionin e regjistruar dhe përpunuar për secilin prej tyre. Ato janë: **1-** tërmetet e lokalizuar; **2-** tërmetet e regjistruar nga më shumë se një stacion lokal, por jo të lokalizuar dhe **3-** tërmete të regjistruar të paktën nga një stacion lokal, por me më shumë se një fazë valore.

Të dhënat parametrike, si më sipër, vlerësohen në mënyrë të pandërprerë nëpërmjet monitorimit sizmologjik dhe bazohen në analizën sasiore të regjistrimit instrumental valor. Llogaritja e vlerave të tyre është produkt i aplikimit të metodave analitike të njohura, në mënyrë

GENERAL INFORMATION**Introduction**

The Albanian Seismologic Network's bulletin is a periodic publication of earthquake wave data, source parameters and their magnitudes, for every seismic event occurring inside the Albanian territory and its surroundings. This publication is compiled in the Department of Seismology of the Institute of Geosciences, Energy, Water and Environment under the Polytechnic University of Tirana. All the estimated values, of the parameters, refer to the geographic quadrant confined by the coordinates: 39° - 43° N and 18.5° - 21.5° E. Bulletin comprises a description section, containing the most general information, the section of the used symbols corresponding to all the evaluated parameters, phases data for each of the recorded and located earthquakes. It contains also the event catalogue, the macroseismic information, the statistical information, the focal mechanism solutions and an aerial epicenter distribution map.

Different earthquake information categories are included, depending on their recorded and elaborated information, for each of them. They are: **1-** localized earthquakes; **2-** earthquakes recorded from more than one local station, but not located and **3-** earthquakes recorded at least by one station, but having more than one seismic phase.

The parametric data, as above, are permanently evaluated throughout the seismological monitoring routine, based upon quantitative analysis of instrumental waveform recordings. Their computed values are the direct application

iterative dhe interaktive, të aplikuara në programe llogarites të çertifikuar dhe të njohur globalisht. Kështu, për përcaktimin e të dhënave kohore valore hyrëse përdoret programi Atlas, ndërsa lokalizimi i tërmeteve kryhet nëpërmjet programit Hypoinverse.

Në këtë analizë merret në konsideratë modeli lokal për strukturën e shpejtësisë së përhapjes së valëve sizmike (Ormëni 2007) (kryesisht atyre volumore, primare dhe sekondare, P dhe S). Vlerësimi i magnitudës realizohet duke aplikuar modele të njohur parametrik si ai Richter & Gutenberg (1956) dhe Eaton (1992).

Analiza e të dhënave të publikuara realizohet nga grupi i punës i përbërë nga punonjësit kërkues shkencor Rrapo Ormeni dhe Edmond Dushi si edhe ata ndihmës shkencor Ardian Minarolli dhe Ervin Kasa.

Informacioni instrumental valor përftohet nëpërmjet një rrjeti stacionesh lokal, ku përfshihen: stacioni sizmologjik qëndror i Tiranës (TIR), B. Currit (BCI), Pukës (PUK), Peshkopisë (PHP), Vlorës (VLO), Tepelenës (TPE), Sarandës (SRN) dhe Korçës (KBN), të cilët janë të paisur me sensor me bandë të gjerë regjistrimi. Gjithashtu, rrjeti lokal përmban edhe një numër stacionesh me regjistrim me period të shkurtër, ku përfshihen: Shkodra (SDA), Laçi (LACI) dhe Leskoviku (LSK).

Në analizë përfshihen edhe të dhënat valore të regjistruara e përcaktuara nga një numër stacionesh sizmologjik të rajonit dhe Mesdheut, të cilët i përkasin rrjetit sizmologjik të Universitetit "Aristotel" të Selanikut (AUTH), rrjetit sizmologjik Italian të menaxhuar nga Instituti Kombëtar i Gjeofizikës dhe Vullkanologjisë (INGV), si edhe stacione të rrjetit sizmologjik të Observatorit Sizmologjik të Malit të Zi (MSO).

result of known analytical methods, iteratively and interactively, within certified and globally known computational programs.

Hence, for the onset time data determination, the Atlas program is used, whereas the earthquake location is done by mean of Hypoinverse program. For this analyze, a local velocity model accounting for the local and accurate seismic wave paths, is used (Ormëni, 2007). Mainly body seismic waves are concerned, primary P-phases and secondary S-phases, within computation and location process. Magnitude determination is achieved through known parametric models as the one of Richter (1956) and Eaton (1992).

Analyzes of the published data is undertaken from a dedicated working group, comprising by scientific staff Rrapo Ormeni & Edmond Dushi and technical staff Ardian Minarolli & Ervin Kasa.

Instrumental information is achieved through a network of local seismological stations, as listed: Tirana central station (TIR), B. Curri (BCI), Puka (PUK), Peshkopia (PHP), Vlora (VLO), Tepelena (TPE), Saranda (SRN) and Korça (KBN), which are equipped with broad band seismic sensors.

Also, the local network enumerates some short period recording stations, situated at Shkodra (SDA), Laçi (LACI) and Leskoviku (LSK).

In this analyze, data from a number of regional stations, are included as well. They are distributed along the Mediterranean coast and belong to the AUTH network of the "Aristotle" university of Thessaloniki, Italian National Seismological Network managed from National Institute of Geophysics and Volcanoes (INGV) as well as seismological stations of the Seismological Observatory of Montenegro (MSO).

STACIONET E RRJETIT SIZMOLOGJIK (SEISMOLOGICAL NETWORK STATION)

Kodi Stacionit (Stn. Code)	Regjistrimi (po/jo) (Registered)	Koordinatat (Coordinates)		Lartesia (Elevation)	Tipi Stacionit (Stn. Type)	Sizmometri (Sensor Type)	Sistemi regjistrimit (Recording system)	Sistemi i komunikimit (Communication system)	Perioda natyrore e sensorit (Natural Sensor period)
		V-J (N-S)	L-P (E-W)						
TIR	Po (y)	41.3477	19.8650	198	3C-VBB	STS-2	Quantera	VSAT	120 s
BCI	Po	42.3666	20.0675	500	3C-BB	CMG-40T	Trident	VSAT	40 s
KKS	Po	42.0756	20.4113	300	3C-BB	SM-4 (B)	GBD-x16	Dial Up	0.2 s
PHP	Po	41.6847	20.4408	670	3C-BB	Trillium-40	Trident	VSAT	40 s
PUK	Po	42.0426	19.8926	900	3C-BB	Trillium-40	Trident	VSAT	40 s
SDA	Po	42.0519	19.4986	80	3C-SP	SM-4 (B)	GBD-x16	Dial Up	0.2 s
LACI	Po	41.6363	19.7094	40	3C-SP	SM-4 (B)	GBD-x16	Dial Up	0.2 s
KBN	Po	40.6236	20.7874	800	3C-BB	Trillium-40	Trident	VSAT	40 s
LSK	Po	40.1500	20.6000	920	3C-SP	SM-4 (B)	GBD-x16	Dial Up	0.2 s
TPE	Po	40.2952	20.0109	240	3C-BB	CMG-40T	Trident	VSAT	40 s
VLO	Po	40.4686	19.4955	80	3C-BB	Trillium-40	Trident	VSAT	40 s
SRN	Po	39.8800	20.0005	20	3C-BB	Trillium-40	Trident	VSAT	40 s

SIMBOLIKA E PERDORUR NE PERMBAJTJEN E BULETINIT SIZMOLOGJIK
SYMBOLIC USED IN SEISMOLOGICAL BULLETIN CONTAIN

Simboli (Symbol)	Parametri korrespondues (Corresponding parameter)	Pershkrimi (Description)
<i>Y</i>	Viti (year)	Viti ndodhjes se ngjarjes (year of occurrence)
<i>M</i>	Muaji (month)	Muaji i ndodhjes së ngjarjes (month of occurrence)
<i>D</i>	Dita (day)	Data e ndodhjes së ngjarjes (date of occurrence)
<i>H</i>	Ora (hour)	Ora ne origjine (UTC) (origine time universal)
<i>M</i>	Minuta (minute)	Minuta (origine time minute)
<i>Sec</i>	Sekonda (second)	Sekonda (origine time second)
<i>Lat</i>	Gjerësia gjeografike (latitude)	Gjeresia gjeografike e epiqendrës Veri-Jug(°) Geographical latitude N-S direction
<i>Lon</i>	Gjatësia gjeografike (longitude)	Gjatesia gjeografike e epiqendrës Lindje-Perendim(°) Geographical longitude E-W direction
<i>Dep</i>	Thellësia (depth)	Thellësia vatrore (focal depth)-km
<i>Hor. err</i>	Gabimi horizontal (horizontal error)	Gabimi i bërë në vlerësimin e epiqendres (km) Estimation error of epicentre
<i>Ver. err</i>	Gabimi vertikal (vertical error)	Gabimi i bërë në vlerësimin e thellësisë (km) Depth estimation error
<i>Gap</i>	Mosmbulimi me stacione minitorimi (azimutal gap)	Zona e sferës fokale (imagjinare), e pa mbuluar me stacione regjistruar Azimutal station gap
<i>Rms</i>	Gabimi mesatar kuadratik (Root mean squarre)	Gabimi i pergjithshem (Total estimation error-sec)
<i>Mag</i>	Magnituda (magnitude)	Madhesia e termetit sipas shkalles lokale te kalibruar (local calibrated measure of the earthquake size)
<i>Net</i>	Emërtimi i rrjetit sizmologjik (network code)	Kodi nderkombetar i identifikimit te rrjetit ne FDSN (Federation of Digital seismologies network) eshte AC

<i>Nr</i>	Numuri i stacioneve (station's number)	(International code of Network identification on FDSN is AC) Nr. Stacioneve te perdorur ne lokalizim (No. Of used stations)
<i>STAT</i>	Kodi i stacionit (station code)	Kodi nderkombetar qe perdoret per te identifikuar stacionin perkates sizmologjik (tre karaktere) (international stn code)
<i>SP</i>	Komponentja e regjistrimit (recording component)	Kodimi i komponenteve te regjistrimit ne perputhje e orientimin gjeografik 3D (Z, N ose E) Component code according to recording direction
<i>IPHASW</i>	Faza valore sizmike (seismic wave phase)	tipi i valës P (P_g / P_n) ose S (S_g / S_n) (wave phase type)
<i>D</i>	Polariteti i hyrjes së parë në komponenten vertikale (first vertical onset polarity)	Polariteti i vales renes ne statcion, ne komponenten Z (first onset polarity on Z)
<i>HRMM SECON</i>	Ora, minuta dhe sekonda (time onsets for each phase)	Te dhenat kohore per mbritjen e seciles faze ne regjistrim Time data for each phases on recording
<i>AZIMU</i>	Kendi azimutal (station-source azimuth angle)	Azimuti stacion- vater termeti Station-focus azimuthal angle
<i>RES</i>	Diferenca kohore (time residual)	Ndryshimi ndermjet kohës teorike të llogaritur nga modeli dhe kohës faktike, nga regjistrimi Time residuals between calculated and observed times
<i>DIS</i>	Largesia epiqendrore (epicentral distance)	Largesia hoeizontale epiqender-stacion Distance from epicenter to the station
<i>DUR</i>	Zgjatshmeria e sinjalit sizmik (signal time duration)	Shpreh zgjatshmerinë e plotë të sinjalit sizmik ne sizmogram Total Signal Duration

INFORMACIONI PARAMETRIK FAZOR DHE LOKALIZIMI (PARAMETRIC PHASES INFORMATION AND LOCATION)

TËRMETE TË AFËRTA (NEAR EARTHQUAKE)

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	3	0844	00.56	40.69	19.71	7	ASN	5	0.1	2.9	ROSKOVEC -ALBANIA
GAP=131					hor.err=1km			ver.err=1KM				
STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md		
VLO	SZ	IPG		0844	06.66	217	0.0	31	43	3.0		
VLO	SE	ISG		0844	11.16	217	-0.1	31				
TPE	SZ	IPG		0844	09.78	251	0.0	51	31	2.8		
TPE	SE	ISG		0844	17.23	251	0.0	51				
TIR	SZ	IPG		0844	13.02	9	-0.1	73	32	2.9		
TIR	SE	ISG		0844	23.11	9	0.0	73				

SRN	SZ	IPG	0844	17.11	165	0.0	94
SRN	SE	ISG	0844	23.94	165	0.1	94
PHP	SZ	IPN	0844	22.53	28	0.0	125
PHP	SE	ISN	0844	39.42	28	0.1	125

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	3	1324	33.50	40.58	19.19	18	ASN	4	0.2	2.7	ADRIATIC-SEA
					hor.err=3km				ver.err=2KM			

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
VLO	SZ	IPG		1324	33.48	115	0.1	28	20	2.5
VLO	SE	ISG		1324	44.12	115	0.1	28		
TPE	SZ	IPG		1324	49.00	114	-0.1	75	26	2.6
TPE	SE	ISG		1324	57.71	114	0.1	75		
SCTE	SZ	IPG		1324	47.65	225	0.1	83		
SCTE	SE	ISG		1325	00.11	225	0.1	83		
SRN	SZ	IPG		1324	51.90	236	0.1	103	26	2.6
SRN	SE	ISG		1325	04.12	236	-0.1	103		
IGT	SZ	IPN		1324	59.47	139	0.1	151		
IGT	SE	ISN		1325	16.65	139	0.1	151		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	3	1622	06.49	40.27	22.41	8	ASN	4	0.3	3.9	GREECE
					hor.err=3km				ver.err=4KM			

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
FNA	SZ	IPN		1622	22.06	304	0.3	103		
FNA	SE	ISN		1622	33.18	304	0.1	103		
IGT	SZ	IPN		1622	40.47	246	0.2	195		
IGT	SE	ISN		1623	03.16	246	0.1	195		
TPE	SZ	IPN		1622	40.96	272	0.1	203	76	3.7
TPE	SE	ISN		1623	07.92	272	-0.2	203		
SRN	SZ	IPN		1622	42.18	259	0.2	209	114	4.1
SRN	SE	ISN		1623	09.51	259	0.1	209		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	3	2114	50.23	40.94	20.23	21	ASN	4	0.1	2.8	KABASHI, GRAMSH
					hor.err=1km				ver.err=2KM		-ALBANIA	

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		2115	00.47	326	0.0	54	20	2.6
TIR	SE	ISG		2115	08.80	326	0.0	54		
FNA	SZ	IPG		2115	08.16	209	0.1	99		

FNA	SE	ISG	2115	20.64	209	-0.1	99					
BCI	SZ	IPN	2115	16.91	355	-0.1	159	37			3.2	
BCI	SE	ISN	2115	37.40	355	-0.1	159					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	4	1454	37.01	41.93	20.21	16	ASN	7	0.1	3.3	KLOS, KUKES
				hor.err=2km				ver.err=4KM		-ALBANIA		

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
BCI	SZ	IPG		1454	46.41	347	0.0	50	59	3.5
BCI	SE	ISG		1454	53.61	347	-0.1	50		
TIR	SZ	IPG		1454	49.57	207	0.0	70	41	3.2
TIR	SE	ISG		1454	59.11	207	0.0	70		
FNA	SZ	IPN		1455	04.07	190	0.1	160		
FNA	SE	ISN		1455	28.08	190	0.1	160		
VLO	SZ	IPN		1455	09.15	201	0.1	173		
TIR	SZ	IPN		1455	18.35	188	0.1	182	41	3.2
SCTE	SZ	IPN		1455	15.48	217	-0.1	252		
SCTE	SE	ISN		1455	48.25	217	0.1	252		
IGT	SZ	IPN		1455	18.56	177	-0.2	266		
IGT	SE	ISN		1455	48.09	177	-0.2	266		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	5	0559	32.15	40.62	19.63	9	ASN	4	0.1	2.7	PATOS, FIER
GAP=201				hor.err=1km				ver.err=2KM		-ALBANIA		

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
VLO	SZ	IPG		0559	37.59	314	0.0	20	27	2.7
VLO	SE	ISG		0559	41.64	314	-0.1	20		
TIR	SZ	IPG		0559	47.08	82	0.0	82	27	2.2
TIR	SE	ISG		0559	57.33	82	0.0	82		
PUK	SZ	IPN		0559	59.34	13	0.0	149		
PUK	SE	ISN		0600	16.36	13	0.0	149		
FNA	SZ	IPN		0559	59.42	17	0.1	152		
FNA	SE	ISN		0600	14.35	17	0.1	152		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	5	1330	35.98	40.64	20.35	2	ASN	6	0.2	2.6	EAST-POLICAN
GAP=103				hor.err=1km				ver.err=2KM		-ALBANIA		

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		1330	44.50	218	0.1	48	24	2.6
TPE	SE	ISG		1330	52.04	218	0.0	48		

VLO	SZ	IPG	1330	49.87	256	0.1	75	24	2.6
VLO	SE	ISG	1331	00.12	256	0.0	75		
FNA	SZ	IPG	1330	51.60	79	-0.1	88		
FNA	SE	ISG	1331	04.23	79	0.1	88		
TIR	SZ	IPG	1330	51.93	333	0.1	88		
TIR	SE	ISG	1331	05.00	333	-0.2	88		
SRN	SZ	IPG	1330	52.81	200	0.1	90		
SRN	SE	ISG	1331	06.05	200	0.1	90		
BCI	SZ	IPN	1330	10.45	353	0.1	192		
BCI	SE	ISN	1330	35.19	353	0.1	192		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	5	1557	00.73	40.87	19.75	10	ASN	6	0.2	3.0	S-E LUSHNJE
				GAP=162	hor.err=2km				ver.err=4KM		-ALBANIA	

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
VLO	SZ	IPG		1557	09.02	206	0.0	49	30	2.8
VLO	SE	ISG		1557	17.32	206	0.0	49		
TIR	SZ	IPG		1557	10.62	10	-0.1	53	46	3.2
TIR	SE	ISG		1557	18.90	10	0.0	53		
TPE	SZ	IPG		1557	13.11	161	0.1	67	33	2.4
TPE	SE	ISG		1557	23.11	161	-0.2	67		
PHP	SZ	IPG		1557	18.15	32	0.1	107		
PHP	SE	ISG		1557	33.38	32	0.1	107		
SRM	SZ	IPN		1557	20.23	169	0.1	112		
SRM	SE	ISN		1557	35.27	169	0.2	112		
BCI	SZ	IPN		1557	29.27	8	0.1	168		
BCI	SE	ISN		1557	51.94	8	-0.2	168		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	5	2312	18.20	20.15	19.86	17	ASN	3	0.2	1.8	KUC, VLORE
				GAP=161	hor.err=2km				ver.err=13KM		-ALBANIA	

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		2312	21.92	39	0.1	19	9	1.6
TPE	SE	ISG		2312	25.53	39	0.2	19		
SRN	SZ	IPG		2312	23.98	158	-0.1	33	12	1.2
SRN	SE	ISG		2312	29.98	158	0.3	33		
VLO	SZ	IPG		2312	26.30	319	0.1	46		
VLO	SE	ISG		2312	33.77	319	0.2	46		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	6	0027	44.21	42.16	19.62	17	ASN	2	0.2	1.6	N-E SHKODER

GAP=297 hor.err=3km ver.err=1KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
PUK	SZ	IPG		0027	49.40	120	0.2	25	8	1.6
PUK	SE	ISG		0027	52.88	120	0.1	25		
BCI	SZ	IPG		0027	52.52	57	0.3	42		
BCI	SE	ISG		0027	58.29	57	0.1	42		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 6 0051 41.44

GAP= hor.err=km ver.err=KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		0051	41.44					
TIR	SE	ISG		0051	47.02					

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 9 0230 11.10 40.90 19.86 18 ASN 6 0.4 3.2 ZGJANE LUSHNJE

GAP=127 hor.err=1km ver.err=1KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		0230	20.00	0	0.1	49		
TIR	SE	ISG		0230	28.15	0	0.1	49		
VLO	SZ	IPG		0230	22.00	213	0.0	57	36	3.0
VLO	SE	ISG		0230	30.15	213	0.0	57		
TPE	SZ	IPG		0230	24.10	169	-0.1	69	42	3.2
TPE	SE	ISG		0230	33.10	169	0.1	69		
SRN	SZ	IPG		0230	30.31	174	0.1	114	48	3.3
SRN	SE	ISG		0230	46.10	174	0.1	114		
PUK	SZ	IPN		0230	33.00	1	-0.1	126		
PUK	SE	ISN		0230	50.05	1	-0.1	126		
BCI	SZ	IPN		0231	00.05	6	-0.2	163		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 9 1304 03.50 42.46 20.11 9 ASN 3 0.1 2.6 NORTH B.CURRI

GAP=320 hor.err=1km ver.err=1KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
BCI	SZ	IPG		1304	08.45	194	0.0	11	23	2.6
BCI	SE	ISG		1304	16.45	194	0.0	11		
PUK	SZ	IPG		1304	12.55	201	-0.1	50	23	2.6
PUK	SE	ISG		1304	19.31	201	0.0	50		
PHP	SZ	IPG		1304	19.21	161	0.1	91	23	2.6

PHP SE ISG 1304 33.16 161 0.1 91

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
 2013 5 9 1953 48.04 39.33 20.19 7 ASN 3 0.1 2.7 IONIAN SEA
 GAP=317 hor.err=2km ver.err=5KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
IGT	SZ	IPG		1953	52.97	29	0.1	24		
IGT	SE	ISG		1953	56.87	29	0.1	24		
SRN	SZ	IPG		1953	59.36	346	-0.1	62	25	2.7
SRN	SE	ISG		1954	07.14	346	-0.1	62		
SCTE	SZ	IPN		1954	18.39	300	-0.1	169		
SCTE	SE	ISN		1954	39.14	300	0.1	169		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
 2013 5 10 0403 04.25 40.47 21.39 6 ASN 4 0.1 3.2 GREECE
 GAP=222 hor.err=1km ver.err=3KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
FNA	SZ	IPG		0403	10.49	2	0.1	34		
FNA	SE	ISG		0403	15.74	2	0.1	34		
SRN	SZ	IPN		0403	28.11	242	-0.1	135	40	3.1
SRN	SE	ISN		0403	45.38	242	-0.1	135		
IGT	SZ	IPN		0403	27.26	222	0.1	138		
IGT	SE	ISN		0403	46.85	222	0.1	138		
PUK	SZ	IPN		0403	40.26	325	-0.2	214	42	3.1
PUK	SE	ISN		0404	07.11	325	-0.2	214		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
 2013 5 11 0759 08.22 41.27 20.22 4 ASN 6 0.3 3.1 GURAKUQ, ELBASAN
 GAP=132 hor.err=1km ver.err=1KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		0759	12.95	286	0.0	31	32	2.8
TIR	SE	ISG		0759	19.17	286	0.1	31		
PUK	SZ	IPG		0759	24.10	343	-0.1	90	45	3.1
PUK	SE	ISG		0759	37.10	343	0.0	90		
VLO	SZ	IPG		0759	29.03	215	0.1	108	68	3.2
VLO	SE	ISG		0759	43.40	215	0.1	108		
TPE	SZ	IPG		0759	27.42	190	0.1	110	68	3.3
TPE	SE	ISG		0759	43.00	190	-0.1	110		
BCI	SZ	IPN		0759	30.53	354	-0.1	127	58	3.1
BCI	SE	ISN		0759	47.88	354	-0.1	127		

SRN	SZ	IPN	0759	36.81	188	-0.1	155	43	3.0
SRN	SE	ISN	0759	57.16	188	0.2	155		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
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2013	5	12	0018	48.08								
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GAP=					hor.err=KM					ver.err=KM		
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STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		0018	48.08					
TIR	SE	ISG		0018	54.06					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
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2013	5	12	0012	57.74								
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GAP=					hor.err=KM					ver.err=KM		
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STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPN		0013	44.74					
SRN	SZ	IPN		0013	43.92					
TIR	SZ	IPN		0013	48.00					
VLO	SZ	IPN		0013	48.20					
PUK	SZ	IPN		0013	49.02					
BCI	SZ	IPN		0013	49.83					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
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2013	5	15	1454	53.67	41.44	19.53	6	ASN	5	0.2	3.6	
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GAP=176					hor.err=1KM					ver.err=1KM		DURRES -ALBANIA
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STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		1454	59.15	112	0.0	29	70	3.5
TIR	SE	ISG		1455	03.81	112	0.0	29		
VLO	SZ	IPG		1455	13.26	182	0.0	108	63	3.5
VLO	SE	ISG		1455	27.50	182	0.0	108		
BCI	SZ	IPG		1455	13.55	23	0.1	111	66	3.5
BCI	SE	ISG		1455	28.36	23	-0.1	111		
TPE	SZ	IPN		1455	15.45	162	-0.1	134	75	3.6
TPE	SE	ISN		1455	35.15	162	-0.1	134		
SRN	SZ	IPN		1455	22.76	167	0.1	178	66	3.6
SRN	SE	ISN		1455	46.36	167	0.1	178		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	15	1502	40.28	41.43	19.47	11	ASN	5	0.1	3.8	DURRES -ALBANIA
GAP=176				hor.err=1KM			ver.err=1KM					

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		1502	46.41	106	0.0	32	97	3.8
TIR	SE	ISG		1502	51.79	106	0.0	32		
VLO	SZ	IPG		1502	59.99	179	0.1	107	78	3.7
VLO	SE	ISG		1503	13.98	179	0.0	107		
BCI	SZ	IPG		1503	00.47	25	0.0	114	71	3.6
BCI	SE	ISG		1503	16.01	25	-0.1	114		
TPE	SZ	IPN		1503	02.96	160	0.1	134	87	3.8
TPE	SE	ISN		1503	21.62	160	0.1	134		
SRN	SZ	IPN		1503	10.02	165	0.1	178	99	3.9
SRN	SE	ISN		1503	33.21	165	-0.1	178		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	15	1533	46.19								
GAP=				hor.err=KM			ver.err=KM					

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		1533	46.19					
TIR	SE	ISG		1533	51.68					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	15	1558	09.88								
GAP=				hor.err=KM			ver.err=KM					

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		1558	09.88					
TIR	SE	ISG		1558	13.70					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	15	1711	43.68	41.42	19.53	13	ASN	5	0.1	3.5	DURRES -ALBANIA
GAP=200				hor.err=2KM			ver.err=1KM					

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		1711	49.19	107	0.0	29	65	3.5
TIR	SE	ISG		1711	54.25	107	-0.1	29		
VLO	SZ	IPG		1712	02.84	182	0.1	106	45	3.2

VLO	SE	ISG	1712	16.79	182	0.0	106					
BCI	SZ	IPG	1712	03.48	22	0.1	113	65	3.5			
BCI	SE	ISG	1712	18.79	22	0.1	113					
TPE	SZ	IPN	1712	06.31	162	0.1	132	68	3.6			
TPE	SE	ISN	1712	23.79	162	-0.1	132					
SRN	SZ	IPN	1712	12.90	166	-0.1	176	69	3.6			
SRN	SE	ISN	1712	35.01	166	-0.1	176					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	15	1828	51.93	40.28	19.84	5	ASN	3	0.1	2.3	TEPELENE -ALBANIA
				GAP=256			hor.err=2KM		ver.err=3KM			

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		1828	53.98	77	0.0	13	19	2.3
TPE	SE	ISG		1828	56.64	77	-0.1	13		
VLO	SZ	IPG		1828	59.32	307	0.0	37	19	2.3
VLO	SE	ISG		1829	05.17	307	0.0	37		
SRN	SZ	IPG		1828	59.87	163	0.1	44	19	2.3
SRN	SE	ISG		1829	07.28	163	0.0	44		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	15	2014	18.80	41.27	19.44	12	ASN	3	0.2	2.6	ADRIATIC SEA
				GAP=305			hor.err=1KM		ver.err=2KM			

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		2014	25.73	27	-0.1	35	25	2.6
TIR	SE	ISG		2014	30.60	27	0.1	35		
PUK	SZ	IPG		2014	35.11	23	0.1	92	25	2.6
PUK	SE	ISG		2014	47.55	23	-0.1	92		
BCI	SZ	IPG		2014	42.06	22	-0.1	131	26	2.6
BCI	SE	ISG		2014	59.65	22	0.1	131		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	17	2043	15.61	40.25	20.00	3	ASN	6	0.1	3.3	BENÇE, TEPELENE -ALBANIA
				GAP=121			hor.err=1KM		ver.err=2KM			

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		2043	15.77	54	0.0	5	50	3.3
TPE	SE	ISG		2043	16.52	54	-0.1	5		
SRN	SZ	IPG		2043	23.24	177	-0.1	44	51	3.3
SRN	SE	ISG		2043	30.93	177	-0.1	44		
VLO	SZ	IPG		2043	23.69	298	0.0	46	45	3.2

VLO	SE	ISG	2043	32.44	298	0.0	46						
TIR	SZ	IPG	2043	39.00	356	0.0	119	65	3.5				
TIR	SE	ISG	2043	54.69	356	-0.1	119						
PHP	SZ	IPN	2043	43.55	13	0.1	161	65	3.5				
PHP	SE	ISN	2044	06.18	13	0.0	161						
BCI	SZ	IPN	2043	54.77	1	-0.1	232	65	3.5				
BCI	SE	ISN	2044	24.12	1	-0.1	232						

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 17 2354 59.59

GAP= hor.err=KM ver.err=KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		2354	59.59					
TPE	SE	ISG		2355	00.35					

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 18 0008 07.52

GAP= hor.err=KM ver.err=KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		0008	07.52					
TPE	SE	ISG		0008	08.28					

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 18 0127 47.56

GAP= hor.err=KM ver.err=KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		0127	47.56					
TPE	SE	ISG		0127	48.22					

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 18 0405 44.01

GAP= hor.err=KM ver.err=KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		0405	44.01					
TPE	SE	ISG		0405	45.80					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
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2013	5	18	0407	35.15								
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GAP=

hor.err=KM

ver.err=KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		0407	35.15					
TPE	SE	ISG		0407	35.95					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
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2013	5	18	0507	27.69								
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GAP=

hor.err=KM

ver.err=KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		0507	27.69					
TPE	SE	ISG		0507	28.35					

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
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2013	5	18	0832	48.31	40.16	19.88	18	ASN	3	0.1	2.6	KUÇ, VLORE
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GAP=234

hor.err=3KM

ver.err=2KM

-ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TPE	SZ	IPG		0832	53.35	36	0.0	17	24	2.6
TPE	SE	ISG		0832	56.48	36	0.0	17		
SRN	SZ	IPG		0832	54.91	162	0.1	33	24	2.6
SRN	SE	ISG		0833	00.41	162	-0.1	33		
IGT	SZ	IPG		0833	02.03	152	0.0	80		
IGT	SE	ISG		0833	13.46	152	0.1	80		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
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2013	5	18	2214	25.91	41.03	21.24	10	ASN	4	0.4	2.9	MACEDONIA
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GAP=199

hor.err=2KM

ver.err=2KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
FNA	SZ	IPG		2214	32.39	157	0.2	30		
FNA	SE	ISG		2214	36.13	157	0.3	30		
PHP	SZ	IPG		2214	43.09	318	-0.3	98	29	2.8
PHP	SE	ISG		2214	56.62	318	0.1	98		
PUK	SZ	IPN		2214	53.02	316	0.3	158	31	2.9
PUK	SE	ISN		2215	14.02	316	-0.4	158		
SRN	SZ	IPN		2214	54.82	220	0.2	166	31	2.9
SRN	SE	ISN		2215	15.01	220	0.4	166		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	19	0157	38.49	43.42	18.97	10	ASN	3	0.3	2.8	MONTENEGRO
				hor.err=2KM			ver.err=4KM					

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
BCI	SZ	IPN		0158	03.48	142	0.2	142	29	2.8
BCI	SE	ISN		0158	23.11	142	0.3	142		
PUK	SZ	IPN		0158	05.96	153	-0.3	171	30	2.8
PUK	SE	ISN		0158	30.01	153	0.3	171		
PHP	SZ	IPN		0158	14.69	147	0.2	227	30	2.8
PHP	SE	ISN		0158	44.31	147	-0.1	227		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	19	0855	46.00	41.45	20.48	7	ASN	3	0.3	2.7	MACEDONIA
				hor.err=1KM			ver.err=1KM					

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
PHP	SZ	IPG		0855	51.20	352	0.2	25	26	2.7
PHP	SE	ISG		0855	55.30	352	-0.3	25		
TIR	SZ	IPG		0855	56.20	258	0.3	53	27	2.7
TIR	SE	ISG		0856	04.20	258	0.1	53		
FNA	SZ	IPN		0856	05.10	134	0.2	106		
FNA	SE	ISN		0856	19.20	134	0.1	106		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	20	1927	38.83	41.01	20.96	3	ASN	3	0.3	2.9	MACEDONIA
				hor.err=2KM			ver.err=2KM					

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
PHP	SZ	IPG		1927	47.54	330	0.1	85	33	2.9
PHP	SE	ISG		1927	53.49	330	-0.1	85		
TIR	SZ	IPG		1927	53.56	293	-0.1	98	33	2.9
TIR	SE	ISG		1928	05.63	293	-0.1	98		
BCI	SZ	IPN		1927	56.25	334	0.1	167		
BCI	SE	ISN		1298	09.76	334	0.1	167		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	21	2255	00.42	43.10	18.71	6	ASN	4	0.5	3.7	MONTENEGRO
				hor.err=1KM			ver.err=5KM					

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
BCI	SZ	IPN		2255	24.53	116	0.1	138	73	3.7
BCI	SE	ISN		2255	43.19	116	0.1	138		
PHP	SZ	IPN		2255	37.46	137	0.1	212	73	3.7
PHP	SE	ISN		2256	05.44	137	-0.1	212		
TIR	SZ	IPN		2255	37.61	153	-0.1	217	73	3.7
TIR	SE	ISN		2256	08.56	153	-0.1	217		
SRN	SZ	IPN		2255	57.14	162	0.2	337		
SRN	SE	ISN		2256	41.12	162	-0.2	337		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	22	0535	49.92	43.24	18.85	4	ASN	3	0.4	3.3	MONTENEGRO
				GAP=347			hor.err=6KM			ver.err=7KM		

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
BCI	SZ	IPN		0536	10.65	138	0.1	134	39	3.1
BCI	SE	ISN		0536	29.79	138	0.1	134		
PUK	SZ	IPN		0536	12.90	174	0.1	158	39	3.1
PUK	SE	ISN		0536	35.49	174	-0.1	158		
PHP	SZ	IPN		0536	23.76	142	0.2	216	39	3.1
PHP	SE	ISN		0536	51.66	142	-0.2	216		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	24	1409	07.15	38.65	20.33	4	ASN	7	0.6	4.9	GREECE
				GAP=315			hor.err=6KM			ver.err=8KM		

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
SRN	SZ	IPN		1409	30.63	349	0.1	138	195	4.9
SRN	SE	ISN		1409	48.71	349	0.1	138		
TPE	SZ	IPN		1409	36.87	352	0.1	183	195	4.9
TPE	SE	ISN		1409	56.11	352	-0.1	183		
VLO	SZ	IPN		1409	42.35	341	0.1	213	195	4.9
VLO	SE	ISN		1410	11.31	341	-0.1	213		
SCTE	SZ	IPN		1409	41.68	316	0.1	225		
SCTE	SE	ISN		1410	04.58	316	-0.1	225		
TIR	SZ	IPN		1409	51.26	355	0.1	301	181	5
TIR	SE	ISN		1410	26.15	355	-0.2	301		
PHP	SZ	IPN		1409	55.58	222	0.2	336	182	5
PHP	SE	ISN		1410	32.25	222	-0.2	336		
BCI	SZ	IPN		1410	05.28	357	-0.2	312		
BCI	SE	ISN		1410	49.59	357	-0.2	312		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
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2013 5 24 2112 06.49 40.06 19.86 7 ASN 4 0.1 2.7 BORSH, SARANDE
GAP=124 hor.err=2KM ver.err=1KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
SRN	SZ	IPG		2112	11.16	150	0.0	24	28	2.7
SRN	SE	ISG		2112	14.37	150	-0.1	24		
TPE	SZ	IPG		2112	12.31	26	0.0	28	28	2.7
TPE	SE	ISG		2112	16.30	26	-0.1	28		
SCTE	SZ	IPG		2112	28.08	271	0.0	119		
SCTE	SE	ISG		2112	43.39	271	0.1	119		
TIR	SZ	IPN		2112	32.99	22	0.1	142	29	2.7
TIR	SE	ISN		2112	52.11	22	-0.1	142		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
2013 5 25 0608 49.76 41.30 19.41 24 ASN 5 0.1 2.9 ADRIATIC SEA
GAP=173 hor.err=1KM ver.err=2KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		0608	57.28	83	0.0	38	27	2.7
TIR	SE	ISG		0609	03.58	83	-0.1	38		
PUK	SZ	IPG		0609	05.59	25	0.1	91	28	2.7
PUK	SE	ISG		0609	18.35	25	0.1	91		
PHP	SZ	IPG		0609	06.68	63	0.1	95	35	3
PHP	SE	ISG		0609	18.59	63	0.1	95		
BCI	SZ	IPG		0609	11.47	24	0.1	130	36	3
BCI	SE	ISG		0609	28.70	24	-0.1	130		
SCTE	SZ	IPG		0609	17.89	121	0.1	158		
SCTE	SE	ISG		0609	38.69	121	-0.1	158		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
2013 5 26 0233 33.14 41.10 21.37 3 ASN 4 0.3 2.9 MACEDONIA
GAP=256 hor.err=4KM ver.err=7KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
PHP	SZ	IPG		0233	32.45	315	0.1	97	30	2.9
PHP	SE	ISG		0233	45.46	315	0.2	97		
TIR	SZ	IPG		0233	37.58	284	-0.2	122	30	2.9
TIR	SE	ISG		0233	52.69	284	-0.1	122		
PUK	SZ	IPN		0233	45.36	312	0.1	157		
PUK	SE	ISN		0233	04.45	312	0.2	157		
BCI	SZ	IPN		0233	45.89	306	-0.2	174		
BCI	SE	ISN		0233	09.56	306	-0.1	174		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 26 1950 22.40 41.24 20.11 10 ASN 5 0.2 3 ELBASAN
 GAP=160 hor.err=4KM ver.err=1KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		1950	27.17	300	0.0	24	24	2.5
TIR	SE	ISG		1950	32.23	300	-0.1	24		
PHP	SZ	IPG		1950	32.90	28	0.0	50	32	2.9
PHP	SE	ISG		1950	42.90	28	0.0	50		
VLO	SZ	IPG		1950	40.92	292	0.1	100	37	3
VLO	SE	ISG		1950	55.23	292	0.1	100		
BCI	SZ	IPN		1950	44.55	359	-0.1	125		
BCI	SE	ISN		1951	02.75	359	-0.1	125		
SRN	SZ	IPN		1950	47.93	184	-0.1	151	41	3.1
SRN	SE	ISN		1951	08.83	184	-0.1	151		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
 2013 5 27 0328 54.59 42.10 19.59 20 ASN 4 0.1 2.9 SHKODER
 GAP=248 hor.err=1KM ver.err=1KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
PUK	SZ	IPG		0329	00.41	127	0.0	25	31	2.9
PUK	SE	ISG		0329	04.28	127	0.1	25		
BCI	SZ	IPG		0329	03.94	257	-0.1	41	30	2.9
BCI	SE	ISG		0329	11.82	257	-0.1	41		
PHP	SZ	IPG		0329	09.26	348	0.0	84	31	2.9
PHP	SE	ISG		0329	20.90	348	0.1	84		
TIR	SZ	IPG		0329	10.42	228	0.1	86		
TIR	SE	ISG		0329	22.17	228	-0.1	86		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
 2013 5 27 1833 38.13 41.80 21.00 6 ASN 3 0.1 2.8 MACEDONI
 GAP=293 hor.err=2KM ver.err=1KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
PHP	SZ	IPG		1833	41.35	251	-0.1	49	27	2.8
PHP	SE	ISG		1833	52.53	251	0.1	49		
BCI	SZ	IPG		1833	55.83	314	0.1	96	28	2.8
BCI	SE	ISG		1834	09.26	314	0.1	96		
TIR	SZ	IPG		1833	57.04	240	0.1	106		
TIR	SE	ISG		1834	11.51	240	-0.1	106		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter

2013 5 28 0628 27.19 40.24 19.55 7 ASN 4 0.1 2.7 DUKAT, VLORE
 GAP=123 hor.err=2KM ver.err=1KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
VLO	SZ	IPG		0628	31.38	350	0.0	25	24	2.4
VLO	SE	ISG		0628	36.43	350	0.1	25		
TPE	SZ	IPG		0628	33.40	39	-0.1	39	34	2.9
TPE	SE	ISG		0628	40.05	39	-0.1	39		
SRN	SZ	IPG		0628	31.52	55	0.0	55	28	2.7
SRN	SE	ISG		0628	45.51	55	0.1	55		
SCTE	SZ	IPG		0628	43.96	94	-0.1	94		
SCTE	SE	ISG		0628	56.55	94	-0.1	94		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
 2013 5 28 1944 15.28 42.48 20.05 6 ASN 2 0.1 1.9 DRAGOBI, B.CURI
 GAP=339 hor.err=6KM ver.err=8KM -ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
BCI	SZ	IPG		1944	18.62	175	0.0	13	9	1.9
BCI	SE	ISG		1944	20.18	175	0.0	13		
PUK	SZ	IPG		1944	24.81	196	0.0	51	9	1.9
PUK	SE	ISG		1944	33.12	196	0.1	51		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
 2013 5 28 1958 38.56 39.84 20.73 2 ASN 5 0.4 3.5 GREECE
 GAP=307 hor.err=4KM ver.err=7KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
IGT	SZ	IPG		1958	45.45	226	0.1	49		
IGT	SE	ISG		1958	54.78	226	0.1	49		
SRN	SZ	IPG		1958	48.66	275	0.1	63	65	3.5
SRN	SE	ISG		1958	57.89	275	-0.1	63		
TPE	SZ	IPG		1958	51.05	310	0.1	79	66	3.5
TPE	SE	ISG		1959	05.16	310	-0.1	79		
VLO	SZ	IPN		1959	00.01	184	-0.1	126	66	3.5
VLO	SE	ISN		1959	20.56	184	-0.1	126		
TIR	SZ	IPN		1959	10.48	304	0.1	182		
TIR	SE	ISN		1959	35.14	304	-0.2	182		

Y M D HM Sec Lat Long Dep Net Nr Rms Mag Epicenter
 2013 5 28 2039 12.05 39.75 20.71 3 ASN 4 0.3 3 GREECE
 GAP=318 hor.err=4KM ver.err=4KM

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
IGT	SZ	IPN		2039	21.01	234	0.1	41		
IGT	SE	ISN		2039	27.45	234	-0.1	41		
SRN	SZ	IPN		2039	24.66	283	-0.1	62	38	3
SRN	SE	ISN		2039	33.27	283	-0.1	62		
TPE	SZ	IPN		2039	26.88	315	0.1	85	37	3
TPE	SE	ISN		2039	41.33	315	0.1	85		
FNA	SZ	IPN		2039	29.82	16	0.1	127		
FNA	SE	ISN		2039	53.08	16	0.1	127		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	29	2247	39.24	43.32	18.83	7	ASN	4	0.1	3.4	MONTENEGRO
				GAP=338			hor.err=1KM			ver.err=2KM		

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
BCI	SZ	IPN		2248	04.80	136	0.1	146	63	3.6
BCI	SE	ISN		2248	22.42	136	-0.1	146		
PUK	SZ	IPN		2248	07.74	148	0.1	166	51	3.3
PUK	SE	ISN		2248	24.86	148	0.2	166		
PHP	SZ	IPN		2248	18.47	143	-0.1	224	57	3.5
PHP	SE	ISN		2248	45.51	143	0.2	224		
TIR	SZ	IPN		2248	19.12	158	0.2	235		
TIR	SE	ISN		2248	48.01	158	-0.2	235		

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	31	0443	15.45	41.13	20.13	7	ASN	5	0.1	2.6	ELBASAN
				GAP=208			hor.err=1KM			ver.err=2KM		-ALBANIA

STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md
TIR	SZ	IPG		0443	21.21	313	0.0	33	25	2.6
TIR	SE	ISG		0443	26.88	312	-0.1	33		
PHP	SZ	IPG		0443	27.26	22	-0.1	66	25	2.6
PHP	SE	ISG		0443	36.60	22	0.0	66		
PUK	SZ	IPG		0443	33.73	319	0.1	103	28	2.8
PUK	SE	ISG		0443	48.17	319	0.0	103		
FNA	SZ	IPG		0443	35.67	109	0.0	112		
FNA	SE	ISG		0443	50.15	109	-0.1	112		
BCI	SZ	IPN		0443	40.61	358	-0.1	137	28	2.8
BCI	SE	ISN		0443	58.97	358	0.1	137		

TERMETE TE LARGET (LONG DISTANCE EARTHQUAKE)

Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	11	2105	42.10								TONGA
GAP=					hor.err=KM			ver.err=KM				
STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md		
BCI	SZ	IP		2106	21.32							
TIR	SZ	IP		2106	22.68							
TPE	SZ	IP		2106	24.04							
VLO	SZ	IP		2106	24.59							
SRN	SZ	IP		2106	24.04							
Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	18	1009	19.61								SOUTH IRAN
GAP=					hor.err=KM			ver.err=KM				
STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md		
TPE	SZ	IP		1010	04.85							
SRN	SZ	IP		1010	04.58							
TIR	SZ	IP		1010	14.11							
PUK	SZ	IP		1010	01.12							
BCI	SZ	IP		1010	04.25							
Y	M	D	HM	Sec	Lat	Long	Dep	Net	Nr	Rms	Mag	Epicenter
2013	5	24	0554	51.88	54.91	15.34	598		7		8.3	SEA OF
OKHOTSK					hor.err=KM			ver.err=KM				
GAP=					hor.err=KM			ver.err=KM				
STAT	SP	IPHASW	D	HRMM	SECON	AZIMU	RES	DIS	DUR	Md		
PHP	SZ	IP		0555	34.40							
BCI	SZ	IP		0555	34.87							
PUK	SZ	IP		0555	34.71							
TIR	SZ	IP		0555	40.06							
TPE	SZ	IP		0555	47.06							
VLO	SZ	IP		0555	50.58							
SRN	SZ	IP		0555	54.69							

**PËRSHKRIM MAKROSIZMIK I
TËRMEVE TË NDJESHME NË
VENDIN TONË**

Intensiteti i tërmetit në epiqendër I_0 është përcaktuar me formulën $I_0 = \text{---}$. Intensiteti I në qytete është

përcaktuar nga informacioni i marrë mbi ndjeshmerinë e tërmetit nga emergjencat civile si dhe burime të tjera.

**MACROSEISMIC DESCRIPTION OF
EARTHQUAKES FELT IN OUR
COUNTRY**

The epicentral Intensity of earthquake I_0 is determined by the formula $I_0 = \text{---}$. The felt

information of earthquakes in inhabitation zones provide by civil emergencies and other source is used to determine the Intensity I.

Nr	Data (Date)	Kohëndodhja (Origin time)	Epiqendra dhe të dhëna makrosizmike EMS-98 (Epicenter and macroseismic data EMS-98)
1	15.05.2013	14:54:37.9	Epiqendra: 41.44V; 19.53L, 11 km në Veri të qytetit Durrësit. Intensiteti i tërmetit në epiqendër $I_0=IV-V$ balle Ndjerë: IV ballë ne qytetin e Durrësit, III-IV ballë në qytetin e Tiranës. (Epicentre: 41.44N; 19.53E, 11 km North of Durrësi town. Epicentral Intensity $I_0=IV-V$. Felt: IV at Durrësi town, III-IV at Tirana city
2	15.05.2013	15:02:17.9	Epiqendra: 41.47V; 19.43L, 12 km në Veri të qytetit Durrësit. Intensiteti i tërmetit në epiqendër $I_0=V$ balle Ndjerë: IV-V ballë ne qytetin e Durrësit, IV ballë në qytetin e Tiranës dhe Kavajës. (Epicentre: 41.47N; 19.43E, 12 km North of Durrësi town. Epicentral Intensity $I_0=V$. Felt: IV –V at Durrësi town, IV at Tirana and Kavaja city
3	15.05.2013	17:11:15.4	Epiqendra: 41.42V; 19.53L, 11 km në Veri të qytetit Durrësit. Intensiteti i tërmetit në epiqendër $I_0=IV-V$ balle Ndjerë: IV ballë ne qytetin e Durrësit, III-IV ballë në qytetin e Tiranës. (Epicentre: 41.44N; 19.53E, 11 km North of Durrësi town. Epicentral Intensity $I_0=IV-V$. Felt: IV at Durrësi town, III-IV at Tirana city Felt: IV –V at Durrësi town, IV at Tirana and Kavaja city
4	17.05.2013	20:43:52.4	Epiqendra: 40.25V; 20.00L, 4 km në Jug-Perndim të

			qytetit Tepelenes. Intensiteti i tërmetit në epiqendër $I_0=IV$ balle Ndjerë: IV ballë ne qytetin e Tepelenes dhe Memaliaj. (Epicentre: 40.25N; 20.00E, 4 km South-West of Tepelena town. Epicentral Intensity $I_0=IV$. Felt: IV at Tepelenes and Memaliaj town)
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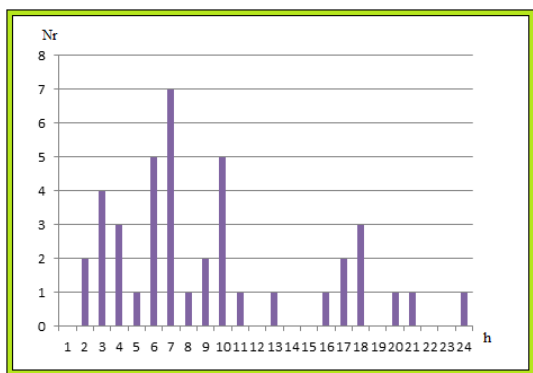
KATALOGU I TËRMEVEVE MUJORE (THE MONTHLY EARTHQUAKE CATALOG)

Data Date	Koha Time	Gjer. Lat	Gjat Long.	Thell. Depth (km)	Nr. St. N ₀ . St	Gab Rms	Mag. (M_D)	Vendndodhja Location
2013 5 3	0844 00.56	40.69	19.71	7	5	0.1	2.9	ROSKOVEC-ALBANIA
2013 5 3	1324 33.50	40.58	19.19	18	4	0.2	2.7	ADRIATIC-SEA
2013 5 3	1622 06.49	40.27	22.41	8	4	0.3	3.9	GREECE
2013 5 3	2114 50.23	40.94	20.23	21	4	0.1	2.8	KABASHI, 7KM SOUTH-GRAMSH
2013 5 4	1454 37.01	41.93	20.21	16	7	0.1	3.3	KLOS, 21KM S-W KUKES
2013 5 5	0559 32.15	40.62	19.63	9	4	0.1	2.7	PATOS, FIER
2013 5 5	1330 35.98	40.64	20.35	2	6	0.2	2.6	21KM EAST-POLICAN
2013 5 5	1557 00.73	40.87	19.75	10	6	0.2	3.0	7KM S-E LUSHNJE
2013 5 5	2312 18.20	20.15	19.86	17	3	0.2	1.8	KUC, VLORE
2013 5 6	0027 44.21	42.16	19.62	17	2	0.2	1.6	12KM N-E SHKODER
2013 5 9	0230 11.10	40.90	19.86	18	6	0.4	3.2	ZGJANE LUSHNJE
2013 5 9	1304 03.50	42.46	20.11	9	3	0.1	2.6	12 KM NORTH B. CURRI
2013 5 9	1953 48.04	39.33	20.19	7	3	0.1	2.7	IONIAN SEA
2013 5 10	0403 04.25	40.47	21.39	6	4	0.1	3.2	GREECE
2013 5 11	0759 08.22	41.27	20.22	4	6	0.3	3.1	GURAKUQ, ELBASAN
2013 5 15	1454 53.67	41.44	19.53	6	5	0.2	3.6	13KM VERI DURRES
2013 5 15	1502 40.28	41.43	19.47	11	5	0.1	3.8	12 VERI DURRES
2013 5 15	1711 43.68	41.42	19.53	13	5	0.1	3.5	12 VERI DURRES
2013 5 15	1828 51.93	40.28	19.84	5	3	0.1	2.3	13KM PERENDIM TEPELENE
2013 5 15	2014 18.80	41.27	19.44	12	3	0.2	2.6	ADRIATIC SEA
2013 5 17	2043 15.61	40.25	20.00	3	6	0.1	3.3	BENÇE, TEPELENE
2013 5 18	0832 48.31	40.16	19.88	18	3	0.1	2.6	KUÇ, VLORE
2013 5 18	2214 25.91	41.03	21.24	10	4	0.4	2.9	MACEDONIA
2013 5 19	0157 38.49	43.42	18.97	10	3	0.3	2.8	MONTENEGRO
2013 5 19	0855 46.00	41.45	20.48	7	3	0.3	2.7	MACEDONIA
2013 5 20	1927 38.83	41.01	20.96	3	3	0.3	2.9	MACEDONIA
2013 5 21	2255 00.42	43.10	18.71	6	4	0.5	3.7	MONTENEGRO
2013 5 22	0535 49.92	43.24	18.85	4	3	0.4	3.3	MONTENEGRO

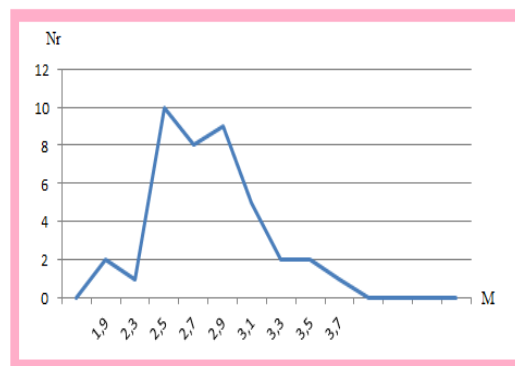
2013	5	24	1409	07.15	38.65	20.33	4	7	0.6	4.9	GREECE
2013	5	24	2112	06.49	40.06	19.86	7	4	0.1	2.7	BORSH, SARANDE
2013	5	25	0608	49.76	41.30	19.41	24	5	0.1	2.9	ADRIATIC SEA, DURRES
2013	5	26	0233	33.14	41.10	21.37	3	4	0.3	2.9	MACEDONIA
2013	5	26	1950	22.40	41.24	20.11	10	5	0.2	3	12KM VERI ELBASAN
2013	5	27	0328	54.59	42.10	19.59	20	4	0.1	2.9	6KM N-E SHKODER
2013	5	27	1833	38.13	41.80	21.00	6	3	0.1	2.8	MACEDONI
2013	5	28	0628	27.19	40.24	19.55	7	4	0.1	2.7	DUKAT, VLORE
2013	5	28	1944	15.28	42.48	20.05	6	2	0.1	1.9	DRAGOBI, 14KM NORTH B. CURI
2013	5	28	1958	38.56	39.84	20.73	2	5	0.4	3.5	GREECE
2013	5	28	2039	12.05	39.75	20.71	3	4	0.3	3	GREECE
2013	5	29	2247	39.24	43.32	18.83	7	4	0.1	3.4	MONTENEGRO
2013	5	31	0443	15.45	41.13	20.13	7	5	0.1	2.6	ELBASAN

STATISTIKA E NGJARJEVE SIZMIKE (STATISTICS OF SEISMIC EVENTS)

Karakteristikat e pergjithshme (General Characteristics)	Vlerat (Data values)
➤ Ngjarje sizmike të ndodhura në kuadrantin (39-43 V; 18.5-21.5 L) Events occurred within quadrant	34
➤ Ngjarje sizmike të ndodhura brenda kufijve shtetërore Events occurred inside state boundaries	26
➤ Thellësia mesatare e ngjarjeve sizmike Mean hypocenter depth	10
➤ Thellësia maksimale Maximum hypocenter depth	24
➤ Magnituda lokale minimale e regjistruar Minimum recorded local magnitude	1.6
➤ Magnituda lokale maksimale e regjistruar Maximum recorded local magnitude	3.8
➤ Intensiteti sizmik maksimal ne epiqendër Maximum seismic intensity	V



Grafiku i shpërndarjes së numurit të ngjarjeve sizmike mujore në vartesi të thellësisë (djathtas) magnitudës (majtas)



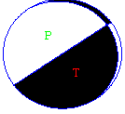
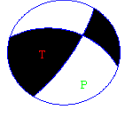
Distribution graphic of monthly seismic event number according to depth (right) magnitude (left)

Zgjidhja e mekanizmit vatror (ZMV)

Për zgjidhjen e mekanizmit të vatres janë përdorur polaritetet e hyrjeve të para P (Pg/Pn), të përcaktuara mbi format valore që shprehin funksionin kohor të burimit sizmik perkatës, në fushën e shpejtësisë. Janë përdorur regjistrimet në bandë të gjere frekuenciale (0.2 – 30 Hz), të cilat janë modeluar nëpërmjet filtrave band-pass: 1.0-5.0 Hz, 2.0-10 Hz dhe 0.1-3.0 Hz. Për të arritur zgjidhjen optimale janë përdorur edhe raporti i amplitudave të valëve volumore AMPSg/AMPPg, (AMPSn/AMPPn), të cilat janë lexuar mbi komponentet e transformuara nga sistemi koordinativ gjeografik në atë sferik (vertikal, radial dhe transversal). Eshtë realizuar një kerkim në rrjetin koordinativ me interval 5.0 – 10 grad, duke vendosur kriteret për gabimin në polaritetet e përdorura. Për zgjidhjen përfundimtare është përdorur programi FOCMEC (Snoke. et al., 1984), ndërsa për të optimizuar zgjidhjen është përdorur programi HASH (Hardebeck & Shearer, 2003).

Focal Mechanism Solution (FMS)

For focal mechanism solution, the first onset polarity of P (Pg/Pn) are used, picked on the source time function respective waveforms. This is done for the velocity field recordings. Broadband recordings are used within the frequency range 0.2-30 Hz, witch are modeled by band-pass filtering in the ranges: 1.0-5.0 Hz, To achieve the optimum solution also the amplitude ratio of the type AMPSg/AMPPg, (AMPSn/AMPPn), are used. These amplitudes are red on rotated and corrected components, from the geographic system to the spherical one (vertical, radial and transversal). A grid search at the 5.0-10 degree cells interval has been applied, setting first the allowed error threshold for polarity readings. For final solution the FOCMEC program has been used (Snoke. et al., 1984). Whereas, to optimize the solution HASH routine(Hardebeck& Shearer, 2003), has been applied as well.

Identifikimi i ngjarjes (Event ID)	Parametrat e burimit (Source parameters)	Magnituda (Magnitude)	Parametrat e Mekanizmit (Focal Mechanism parameters)	Tipi (Focal Type)
2013.05.15.15:02	41.42 (N) 19.53 (E) 11 (km)	3.8	P1: 325, 5, 0 P2: 235, 90, 95 T: 320.02, 44.78 P: 149.98, 44.78	
2013.05.17.20:43	40.25 (N) 20.00 (E) 3 (km)	3.3	P1: 33, 75, 48 P2: 287, 44.1, 158.2 T: 153.02, 18.94 P: 262.14, 43.68	

Harta e epiqendrave të tërmeteve

