

Republic of Lebanon
National Council for Scientific Research

Provisional Seismological Bulletin

from the

NATIONAL SEISMIC NETWORK

January

2013

Prepared by
The National Centre for Geophysical Research
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GENERAL BULLETIN INFORMATION

The National Centre for Geophysical Research is a governmental agency established 1975 in Lebanon by the National Council for Scientific Research (CNRS). The mission of the Centre, among other assignments, is the monitoring of seismic activity within the national territory. Currently, the national seismic network is under deployment; it has been officially registered as GRAL, an acronym for Geophysical Research Arrays of Lebanon. Station coordinates and status are given below.

Since 1993, the Centre has been participating in a regional initiative by the UNESCO and the USGS known as RELEMR, i.e. Reducing Earthquake Losses in the Eastern Mediterranean Region.

Within this framework, the Centre routinely contributes to the database set up for this purpose and maintained by the Euro-Mediterranean Seismological Centre (EMSC). For coherence, the Centre has adopted the recommended seismic analysis system SEISAN developed by Jens Havskov and Lars Ottemoller from the University of Bergen, Norway.

The localization program currently used for locating earthquakes is Hypocenter (Lienert et al., 1986). Plane parallel layers are assumed for local and regional events, while the IASPEI travel time tables are used for distant events.

The velocity model used for all local and regional events is the one currently adopted by the RELEMR initiative.

P-wave velocity (km/sec)	depth to top of layer (km)
6.2	0.0
6.8	14.0
8.05	34.0
8.25	50.0
8.5	80.0

Magnitudes are calculated from the coda duration. The coda wave magnitude is estimated via the formula:

$$M_c = 0.08 + 1.63 * \log_{10}(T) + 0.0009 * D.$$

where T is the coda duration (sec) and D is the epicentral distance (km). The coefficients above were adopted at the outset of our Centre in 1980 and thus are still in use for the sake of continuity.

All available coda values are used for magnitude calculations. No station corrections are used for either travel times or magnitudes calculations. The V_p/V_s velocity ratio used in both layered models above is 1.74.

As a general policy, neither depths, nor epicenters, are fixed unless stated otherwise since this might restrict later use of the data. Consequently, some event locations might be unrealistic such as zero depth earthquakes or teleseismic locations off by 1000 km. However, the locations are based on the available data and reflect the localization procedure and the models used.

STATIONS USED

The stations listed below are operated by the National Centre for Geophysical Research. They constitute the basic setup of the National Seismic Network of Lebanon.

However, readings from other cooperating agencies are also used in locating the events and thus more stations may appear in the event lists than in the station list; it is worth mentioning the systematic use of arrival times from the Cypriot seismic network CSS in order to constrain events corresponding to an active zone off the Lebanese shorelines.

STATION	LATITUDE	LONGITUDE	HEIGHT (m)	NAME	COMMENTS
BHL	3354.25N	3539.25E	1000	BHANNES	Opened May 1980
HWQ	3416.68N	3556.78E	1161	HAWQA	Opened Jan 2001
MATL	3329.32N	3519.78E	5	MATARIH	Opened Nov 2000
FKH	3414.69N	3624.61E	1152	FAKEHEH	Opened Dec 2004
RCY	3329.79N	3550.14E	1370	RACHAYA	Opened Jun 2006
DWR	3323.13N	3524.08E	420	DWEIR	Scheduled 2003
BEYL	3352.30N	3529.59E	49	BEIRUT	Opened Jul 2006
NAQL	3307.02N	3508.46E	83	NAQOURA	Opened Jul 2008
DQRL	3342.34N	3534.21E	963	DEIR QAMAR	Opened Mar 2010
QRWL	3332.86N	3540.93E	875	QARAOUN	Opened Oct 2011
SHBL	3320.90N	3544.63E	1422	CHEBAA	Opened Oct 2011

REGIONAL AND DISTANT EARTHQUAKES

Because regional events and teleseisms are not localized, but simply identified, EMSC determination data are given along with phase arrivals (in general first arrival) at the stations of our network.

MACROSEISMIC DATA

Macroseismic data, if available, are included in the bulletin.

MONTHLY EPICENTER MAPS

Maps will be found on the last page.

ELECTRONIC PUBLICATION

This provisional bulletin is available for download in pdf format on:
<http://www.cnrs.edu.lb/grdownload.html>

REFERENCES

- Havskov, J. and Ottemoller, L. (2001). SEISAN: The Earthquake Analysis Software. -version 7.2-
Institute of Solid Earth Physics, University of Bergen.
<http://www.ifjf.uib.no/seismo/software/seisan.html>
- Lienert, B.R., Berg, E. and Frazer, L.N. (1986). Hypocenter: An earthquake location method using centered, scaled, and adaptively least squares. Bull. Seism. Soc. Am., 76., pp 771-783.

Abbreviations:

TIME: Origin time in UTC (hr. min. and sec.) or data file onset time if event is not located.

LAT: Latitude of epicenter

LON: Longitude of epicenter

DEPTH: Focal depth in kilometer (trailing F indicates fixed depth)

AGENCY: REL throughout the bulletin, aka. REsearch Lebanon

MAGNITUDES: Up to 3 different magnitudes can be given followed by type and reporting agency, e.g. 3.1 MC REL - coda magnitude calculated according to above mentioned formula.

EMSC: Euro-Mediterranean Seismological Centre.

OT: Origin Time

RMS: Root mean square value of travel time residuals

STAT: Station code

CO: Component; S:short period, L:long period, B:broadband.

DIST: Epicenter distance (km)

AZI: Azimuth from source to station

PHAS: Phase; The first letter characterizes onset E(mergent) or I(mpulsive)

P: Polarity (C for compression, D for dilatation)

HR: Hour

MN: Minute

SECON: Seconds

TRES: Residual (seconds)

CODA: Signal duration in seconds

AMPL: Ground Amplitude ($0.5 * (\text{peak to peak})$), (nm) at period PERI

PERI: Period where amplitude is measured

BAZ: Back azimuth (station to event)

ARES: Back azimuth residual

VELO: Apparent phase velocity (km/sec)

WT: Weight of phase in the location

*: An asterisk before the phase arrival time implies a potential timing error. If an S phase is read, differential S-P times will be used in the hypocenter location.

January 1 2013 Hour: 11: 8 27.0 Lat: 33.42N Lon: 35.62E Depth: 17 Agency: REL Local
Magnitudes: 2.2MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	14	125	EP		11 8	30.76	-0.01	20						1.0
SHBL	BN	14	125	ES		11 8	33.52	0.00							1.0
DQRL	SZ	32	352	EP		11 8	32.89	0.01							1.0
DQRL	SN	32	352	ES		11 8	37.19	-0.01							1.0
BHL	BZ	54	3	EP		11 8	35.98	-0.00							1.0

January 1 2013 Hour: 12: 2 29.8 Lat: 33.49N Lon: 35.65E Depth: 0 Agency: REL Local
Magnitudes: 2.3MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	17	89	EP		12 2	32.56	-0.05	23						1.0
RCY	SN	17	89	ES		12 2	34.67	-0.00							1.0
SHBL	BZ	18	151	EP		12 2	32.80	0.03							1.0
SHBL	BE	18	151	ES		12 2	34.94	-0.01							1.0
DQRL	SZ	25	343	EP		12 2	33.79	-0.03							1.0
DQRL	SN	25	343	ES		12 2	36.75	-0.03							1.0
HWQ	SZ	91	17	EP		12 2	44.65	0.10							1.0

January 2 2013 Hour: 11:58 49.3 Lat: 33.35N Lon: 35.60E Depth: 13 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	13	92	EP		1158	52.59	-0.01							1.0
SHBL	BN	13	92	ES		1158	55.03	0.00							1.0
RCY	SZ	27	54	EP		1158	54.35	0.02	29						1.0
RCY	SN	27	54	ES		1158	58.04	-0.00							1.0
DQRL	SZ	39	356	EP		1158	56.07	-0.01							1.0

January 2 2013 Hour: 15:11 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1511	43.94								
DQRL	SZ			EP		1511	44.57								

January 2 2013 Hour: 15:18 25.8 Lat: 33.80N Lon: 35.75E Depth: 0 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	14	322	EP		1518	28.11	0.08							1.0
BHL	BE	14	322	ES		1518	29.68	-0.03							1.0
DQRL	SZ	20	236	EP		1518	28.86	-0.07	49						1.0
DQRL	SN	20	236	ES		1518	31.27	-0.01							1.0
BEYL	BZ	25	288	EP		1518	29.77	0.04							1.0
HWQ	SZ	56	19	EP		1518	34.70	-0.05							1.0

January 3 2013 Hour: 12:23 59.1 Lat: 33.32N Lon: 35.67E Depth: 17 Agency: REL Local
Magnitudes: 2.4MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	8	68	EP		1224	2.36	-0.02	27						1.0
SHBL	BN	8	68	ES		1224	4.79	0.01							1.0
RCY	SZ	25	39	EP		1224	4.09	0.02							1.0
RCY	SE	25	39	ES		1224	7.73	-0.01							1.0
DQRL	SZ	44	348	EP		1224	6.58	-0.00							1.0

January 11 2013 Hour: 5:35 43.1 Lat: 33.99N Lon: 34.65E Depth: 0 Agency: REL Local
Magnitudes: 3.1MC REL Rms: 0.1 secs

OFFSHORE CENTRAL LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEYL	BZ	79	100	EP		535	55.98	0.10							1.0
BEYL	BN	79	100	ES		536	5.38	0.07							1.0
DQRL	SZ	91	110	EP		535	57.81	0.03							1.0
DQRL	SN	91	110	ES		536	8.59	-0.03							1.0
BHL	BZ	93	96	EP		535	57.99	-0.19	59						1.0

January 11 2013 Hour: 11:57 50.9 Lat: 33.38N Lon: 35.49E Depth: 12 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	35	68	EP		1157	56.91	-0.03	41						1.0
RCY	SE	35	68	ES		1158	1.44	0.02							1.0
DQRL	SZ	37	12	EP		1157	57.25	0.03							1.0
DQRL	SE	37	12	ES		1158	1.88	-0.02							1.0
BHL	BZ	60	15	EP		1158	0.83	0.00							1.0

January 15 2013 Hour: 13:42 15.0 Lat: 35.02N Lon: 37.31E Depth: 0 Agency: REL Regional
Magnitudes: 3.5MC REL Rms: 0.1 secs

SYRIA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	149	237	EP		1342	38.79	-0.12	97						1.0
HWQ	BE	149	237	ES		1342	56.61	0.02							1.0
BHL	BZ	196	231	EP		1342	45.54	0.07							1.0
DQRL	SZ	216	228	EP		1342	48.04	0.04							1.0
DQRL	SN	216	228	ES		1343	12.37	-0.04							1.0
SHBL	BZ	235	218	EP		1342	50.29	-0.06							1.0
SHBL	BE	235	218	ES		1343	16.58	0.07							1.0

January 17 2013 Hour: 21:17 39.0 Lat: 31.97N Lon: 30.91E Depth: 15 Agency: REL Regional
Magnitudes: 4.7MC REL Rms: 0.5 secs

EGYPT

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	477	65	EP		2118	42.58	0.07							1.0
DQRL	SE	477	65	ES		2119	29.79	0.27							1.0
BEYL	BZ	478	63	EP		2118	42.50	-0.02							1.0
BEYL	BE	478	63	ES		2119	29.58	0.05							1.0
BHL	BZ	493	63	EP		2118	44.44	-0.00	380						1.0
BHL	BE	493	63	ES		2119	32.97	0.09							1.0
HWQ	SZ	535	60	EP		2118	49.61	0.02							1.0
HWQ	SE	535	60	ES		2119	41.42	-0.42							1.0

January 21 2013 Hour: 19:49 3.0 Agency: REL Distant

EMSC OT=19:49:03.0 30.39N 57.52E 37Km ML=5.4 EASTERN IRAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1953	18.48								
BHL	BZ			EP		1953	21.10								
DQRL	SZ			EP		1953	22.07								
BEYL	BZ			EP		1953	22.07								

January 21 2013 Hour: 22:22 51.0 Agency: REL Distant

EMSC OT=22:22:51.0 04.98N 95.97E 2Km ML=6.0 NORTHERN SUMATRA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		2233	17.64								
BHL	BZ			EP		2233	19.10								
DQRL	SZ			EP		2233	19.49								

January 23 2013 Hour: 15: 0 22.7 Lat: 33.86N Lon: 35.80E Depth: 10 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	14	288	EP		15	0	25.58	-0.01						1.0
DQRL	SZ	28	231	EP		15	0	27.50	0.02						1.0
DQRL	SN	28	231	ES		15	0	31.04	-0.00						1.0
RCY	SZ	41	175	EP		15	0	29.50	-0.03	38					1.0
RCY	SN	41	175	ES		15	0	34.62	0.02						1.0
HWQ	SZ	48	16	EP		15	0	30.60	0.01						1.0

January 25 2013 Hour: 12:43 56.0 Lat: 33.34N Lon: 35.57E Depth: 11 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.0 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	16	88	EP		1243	59.34	0.01							1.0
SHBL	BN	16	88	ES		1244	1.82	-0.01							1.0
QRWL	SZ	25	25	EP		1244	0.47	0.00	28						1.0
RCY	SZ	30	55	EP		1244	1.23	-0.01							1.0
RCY	SN	30	55	ES		1244	5.16	0.01							1.0
DQRL	SZ	40	0	EP		1244	2.75	-0.00							1.0

January 25 2013 Hour: 15:21 2.3 Lat: 33.82N Lon: 35.73E Depth: 27 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	12	324	EP		1521	7.02	-0.01	38						1.0
DQRL	SZ	19	229	EP		1521	7.61	0.02							1.0
DQRL	SN	19	229	ES		1521	11.53	0.00							1.0
QRWL	SZ	31	188	EP		1521	8.69	-0.02							1.0
QRWL	SN	31	188	ES		1521	13.46	-0.01							1.0
RCY	SZ	37	164	EP		1521	9.56	0.00							1.0
RCY	SN	37	164	ES		1521	14.96	0.01							1.0

January 26 2013 Hour: 12:26 58.3 Lat: 33.49N Lon: 35.65E Depth: 15 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.0 secs

SAIDA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	27	EP		1227	1.16	-0.00	28						1.0
QRWL	SN	8	27	ES		1227	3.26	-0.01							1.0
RCY	SZ	18	87	EP		1227	2.21	0.00							1.0
SHBL	BZ	18	149	EP		1227	2.21	-0.02							1.0
SHBL	BN	18	149	ES		1227	5.15	0.02							1.0
DQRL	SZ	25	344	EP		1227	3.12	0.01							1.0

January 26 2013 Hour: 12:41 20.3 Lat: 33.38N Lon: 35.63E Depth: 2 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	11	111	EP		1241	22.13	0.00							1.0
QRWL	SZ	19	14	EP		1241	23.29	-0.05	32						1.0
QRWL	SN	19	14	ES		1241	25.63	0.02							1.0
RCY	SZ	23	56	EP		1241	23.97	0.02							1.0
RCY	SN	23	56	ES		1241	26.67	-0.01							1.0
DQRL	SZ	36	351	EP		1241	26.16	0.02							1.0

January 26 2013 Hour: 14:18 59.5 Lat: 33.37N Lon: 35.62E Depth: 8 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	12	101	EP		1419	2.01	-0.03	32						1.0
SHBL	BE	12	101	ES		1419	3.91	0.02							1.0
QRWL	SZ	21	17	EP		1419	3.13	-0.07							1.0

QRWL	SE	21	17	ES		1419	5.91	0.01									1.0
RCY	SZ	25	55	EP		1419	3.86	0.02									1.0
RCY	SE	25	55	ES		1419	7.01	-0.01									1.0
DQRL	SZ	38	353	EP		1419	5.84	0.06									1.0
DQRL	SN	38	353	ES		1419	10.39	-0.01									1.0

January 27 2013 Hour: 10: 4 36.7 Lat: 33.66N Lon: 35.11E Depth: 33 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.0 secs

OFFSHORE SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	43	83	EP		10	4	45.17	0.07		43				1.0
DQRL	SN	43	83	ES		10	4	51.32	0.01						1.0
BHL	BZ	57	62	EP		10	4	46.83	-0.06						1.0
RCY	SZ	70	105	EP		10	4	48.57	-0.03						1.0
RCY	SN	70	105	ES		10	4	57.41	-0.00						1.0
HWQ	SZ	103	48	EP		10	4	52.77	0.02						1.0

January 27 2013 Hour: 9:59 27.0 Agency: REL Distant
EMSC OT=09:59:27.0 16.13S 173.16W 10Km ML=5.7 TONGA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1019		16.27							
SHBL	BZ			EP		1019		17.12							

January 28 2013 Hour: 14:16 35.3 Lat: 33.39N Lon: 35.65E Depth: 3 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	10	117	EP		1416		37.17	0.01						1.0
SHBL	BE	10	117	ES		1416		38.51	-0.00						1.0
QRWL	SZ	18	10	EP		1416		38.31	-0.01						1.0
RCY	SZ	21	56	EP		1416		38.84	-0.01		36				1.0
RCY	SN	21	56	ES		1416		41.46	0.01						1.0
DQRL	SZ	36	348	EP		1416		41.18	0.01						1.0

January 28 2013 Hour: 16:38 53.0 Agency: REL Distant
EMSC OT=16:38:53.0 42.63N 79.81E 10Km ML=6.1 EASTERN KAZAKHSTAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1645		48.85							
HWQ	BZ			EP		1645		45.79							

January 29 2013 Hour: 1:48 56.0 Agency: REL Regional
EMSC OT=01:48:56.0 35.30N 27.17E 20Km ML=4.4 DODECANESE ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		150		41.31							
HWQ	SZ			EP		150		40.21							

January 29 2013 Hour: 8:27 6.2 Lat: 33.85N Lon: 35.79E Depth: 3 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	14	296	EP		827		8.59	-0.01		29				1.0
DQRL	SZ	26	232	EP		827		10.46	-0.00						1.0
DQRL	SN	26	232	ES		827		13.61	0.01						1.0
RCY	SZ	39	174	EP		827		12.60	-0.02						1.0
RCY	SN	39	174	ES		827		17.36	0.01						1.0
HWQ	SZ	50	17	EP		827		14.30	0.02						1.0

January 29 2013 Hour: 12:50 8.3 Lat: 33.64N Lon: 35.84E Depth: 24 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.1 secs

CENTRAL BEKAA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	15	181	EP		1250		12.88	-0.05		33				1.0
RCY	SN	15	181	ES		1250		16.37	0.02						1.0
QRWL	SZ	18	236	EP		1250		13.12	0.08						1.0

QRWL	SN	18	236	ES	1250	16.50-0.03									1.0
DQRL	SZ	26	287	EP	1250	13.89-0.03									1.0
DQRL	SE	26	287	ES	1250	18.10	0.03								1.0
BHL	BZ	34	330	EP	1250	14.83-0.07									1.0
HWQ	SZ	72	8	EP	1250	20.12	0.05								1.0

January 29 2013 Hour: 12:52 41.7 Lat: 33.69N Lon: 35.85E Depth: 0 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.1 secs

CENTRAL BEKAA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	22	184	EP		1252	45.05-0.13		37						1.0
RCY	SE	22	184	ES		1252	47.83	0.04							1.0
QRWL	SZ	23	224	EP		1252	45.36	0.08							1.0
DQRL	SZ	26	273	EP		1252	45.92	0.05							1.0
DQRL	SN	26	273	ES		1252	48.99	0.00							1.0
BHL	BZ	30	322	EP		1252	46.30-0.15								1.0
HWQ	SZ	66	8	EP		1252	52.33	0.11							1.0

Epicentral Map of Lebanon

JANUARY 2013

