

Republic of Lebanon  
National Council for Scientific Research

# Provisional Seismological Bulletin

from the

## NATIONAL SEISMIC NETWORK

January

2011

Prepared by  
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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

## 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 2011 Hour: 4:23 49.1 Lat: 33.50N Lon: 35.36E Depth: 12 Agency: REL Local  
 Magnitudes: 3.2MC REL Rms: 0.1 secs

SAIDA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	30	40	EP		423	54.51	0.11	79						1.0
DQRL	SN	30	40	ES		423	58.49	0.18							1.0
BEYL	BZ	43	17	EP		423	56.36	0.03							1.0
NAQL	SZ	47	206	EP		423	56.90	-0.09							1.0
NAQL	SE	47	206	ES		424	2.65	-0.16							1.0
BHL	BZ	52	31	EP		423	57.74	-0.10							1.0
HWQ	BZ	102	32	EP		424	5.13	-0.09	77						1.0
FKH	SZ	127	49	EP		424	8.95	-0.04							1.0
FKH	SN	127	49	ES		424	23.51	-0.18							1.0

January 1 2011 Hour: 9:56 57.0 Agency: REL Distant

EMSC OT=09:56:57.0 26.80S 63.19W 565Km Mw=6.9 ARGENTINA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1014	28.34								

January 1 2011 Hour: 16:31 9.3 Lat: 32.65N Lon: 35.61E Depth: 0 Agency: REL Regional  
 Magnitudes: 3.7MC REL Rms: 0.3 secs

EMSC OT=16:31:09.0 32.64N 35.58E 10Km ML=4.0 DEAD SEA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEYL	BZ	136	355	EP		1631	31.13	0.05							1.0
BHL	SZ	139	2	EP		1631	31.67	0.05							1.0
HWQ	BZ	183	10	EP		1631	38.15	0.03	141						1.0
HWQ	BN	183	10	ES		1631	59.51	0.09							1.0
FKH	SZ	192	23	EP		1631	39.11	-0.10							1.0
FKH	SN	192	23	ES		1632	1.60	0.27							1.0

January 2 2011 Hour: 4:18 22.0 Agency: REL Regional

EMSC OT=04:18:22.0 33.92N 28.58E 10Km mb=4.4 EAST MED SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ			EP		419	45.39								
DQRL	SZ			EP		419	48.10								
BHL	BZ			EP		419	48.14								
HWQ	BZ			EP		419	53.11								

January 3 2011 Hour: 14:58 34.0 Lat: 34.63N Lon: 36.38E Depth: 2 Agency: REL Local  
 Magnitudes: 2.9MC REL Rms: 0.1 secs

HERMEL BAALBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	43	176	EP		1458	40.93	-0.02	49						1.0
FKH	SN	43	176	ES		1458	46.08	0.02							1.0
HWQ	BZ	56	226	EP		1458	43.03	0.01							1.0
HWQ	BN	56	226	ES		1458	49.72	0.05							1.0
BHL	BZ	104	220	EP		1458	50.78	-0.11							1.0
DQRL	SZ	127	216	EP		1458	54.57	0.12							1.0
DQRL	SN	127	216	ES		1459	9.49	-0.06							1.0

January 3 2011 Hour: 19:52 7.0 Lat: 33.72N Lon: 35.53E Depth: 0 Agency: REL Local  
 Magnitudes: 3.4MC REL Rms: 0.2 secs

BEIRUT REGION

Earthquake was felt

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	4	121	EP		1952	7.69	0.03	104						1.0
DQRL	SE	4	121	ES		1952	8.13	-0.01							1.0
BEYL	BZ	17	347	EP		1952	9.80	0.08							1.0
BHL	BZ	23	29	EP		1952	10.52	-0.18							1.0
HWQ	BZ	72	32	EP		1952	18.67	0.00							1.0
HWQ	BN	72	32	ES		1952	27.24	-0.06							1.0
FKH	SZ	99	54	EP		1952	23.12	0.07							1.0

January 3 2011 Hour: 20:35 2.5 Lat: 33.73N Lon: 35.56E Depth: 1 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.1 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	3	161	EP		2035	3.08	-0.01	30						1.0
DQRL	SE	3	161	ES		2035	3.54	0.01							1.0
BHL	BZ	21	24	EP		2035	5.93	-0.02							1.0
BHL	BN	21	24	ES		2035	8.49	0.00							1.0
HWQ	BZ	71	30	EP		2035	14.21	0.33							0.2

January 4 2011 Hour: 1:29 30.0 Agency: REL Regional  
EMSC OT=01:29:30.0 34.83N 33.80E 25Km ML=3.8 CYPRUS REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		129	56.78								
DQRL	SZ			EP		129	57.34								
HWQ	BZ			EP		129	58.76								
FKH	SZ			EP		130	4.38								

January 4 2011 Hour: 5:37 41.3 Lat: 33.13N Lon: 35.44E Depth: 0 Agency: REL Local  
Magnitudes: 3.3MC REL Rms: 0.2 secs

SOUTH LEBANON

Earthquake was felt

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	28	267	EP		537	45.82	0.06							1.0
NAQL	SN	28	267	ES		537	49.06	-0.02							1.0
DQRL	SZ	65	11	EP		537	51.81	0.03							1.0
DQRL	SN	65	11	ES		537	59.51	-0.03							1.0
BHL	BZ	88	13	EP		537	55.54	0.03	79						1.0
HWQ	BZ	136	20	EP		538	3.21	0.03							1.0
HWQ	BN	136	20	ES		538	19.36	-0.03							1.0
FKH	SZ	153	36	EP		538	5.76	0.04							1.0

January 4 2011 Hour: 12:54 19.7 Lat: 33.13N Lon: 35.45E Depth: 0 Agency: REL Local  
Magnitudes: 3.2MC REL Rms: 0.2 secs

SOUTH LEBANON

Earthquake was felt

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	65	10	EP		1254	30.12	-0.13	77						1.0
DQRL	SN	65	10	ES		1254	38.19	0.15							1.0
BHL	BZ	88	12	EP		1254	33.95	-0.03							1.0
HWQ	BZ	136	20	EP		1254	41.61	-0.01							1.0
HWQ	BN	136	20	ES		1254	57.75	-0.07							1.0
FKH	SZ	153	35	EP		1254	44.16	0.06							1.0
FKH	SN	153	35	ES		1255	2.02	-0.11							1.0

January 6 2011 Hour: 6:45 6.2 Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		648	17.19								
HWQ	BZ			EP		648	23.01								
FKH	SZ			EP		648	28.41								

January 6 2011 Hour: 9:37 58.6 Lat: 34.43N Lon: 36.82E Depth: 0 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.1 secs

NEBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	43	241	EP		938	5.41	-0.12	57						1.0
FKH	SN	43	241	ES		938	10.69	0.03							1.0
HWQ	BZ	82	258	EP		938	11.89	0.06							1.0
HWQ	BN	82	258	ES		938	21.61	-0.01							1.0
BHL	BZ	122	242	EP		938	18.22	-0.11							1.0
DQRL	SZ	141	235	EP		938	21.36	0.15							1.0

January 6 2011 Hour: 12:23 0.0

Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1224	3.76								
HWQ	BZ			EP		1224	9.03								

January 9 2011 Hour: 4:53 26.7

Lat: 33.96N Lon: 36.05E Depth: 0 Agency: REL Local

Magnitudes: 3.0MC REL

Rms: 0.1 secs

CENTRAL BEKAA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	36	345	EP		453	32.66	0.12							1.0
HWQ	BN	36	345	ES		453	36.81	-0.05							1.0
BHL	BZ	37	260	EP		453	32.62	-0.07	60						1.0
BHL	BN	37	260	ES		453	37.13	0.00							1.0
FKH	SZ	46	47	EP		453	34.02	-0.05							1.0
FKH	SN	46	47	ES		453	39.53	0.01							1.0
BEYL	BZ	52	259	EP		453	35.12	-0.04							0.2
DQRL	SZ	53	237	EP		453	35.26	0.04							1.0

January 9 2011 Hour: 23:42 37.3

Lat: 33.37N Lon: 35.33E Depth: 1 Agency: REL Local

Magnitudes: 2.3MC REL

Rms: 0.0 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	33	213	EP		2342	42.61	-0.03	23						1.0
NAQL	SN	33	213	ES		2342	46.62	0.02							1.0
DQRL	SZ	44	31	EP		2342	44.30	-0.02							1.0
DQRL	SN	44	31	ES		2342	49.53	0.01							1.0
BHL	BZ	67	27	EP		2342	48.05	0.01							1.0
BHL	BN	67	27	ES		2342	55.97	-0.01							1.0
HWQ	BZ	116	29	EP		2342	56.02	0.03							1.0

January 10 2011 Hour: 11:32 0.0

Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1132	30.41								
HWQ	BZ			EP		1132	34.92								

January 10 2011 Hour: 21:34 7.8

Lat: 33.13N Lon: 35.47E Depth: 0 Agency: REL Local

Magnitudes: 2.9MC REL

Rms: 0.3 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	31	268	EP		2134	12.68	-0.07	50						1.0
NAQL	SN	31	268	ES		2134	16.39	0.00							1.0
DQRL	SZ	65	8	EP		2134	18.36	0.06							1.0
DQRL	SN	65	8	ES		2134	26.00	-0.03							1.0
BHL	BZ	88	11	EP		2134	22.04	0.03							1.0
HWQ	BZ	135	19	EP		2134	29.60	-0.03							1.0

January 10 2011 Hour: 22:58 3.5

Lat: 33.13N Lon: 35.46E Depth: 0 Agency: REL Local

Magnitudes: 2.7MC REL

Rms: 0.1 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	30	268	EP		2258	8.21	-0.08	41						1.0
NAQL	SN	30	268	ES		2258	11.83	0.00							1.0
DQRL	SZ	65	9	EP		2258	14.01	-0.01							1.0
DQRL	SN	65	9	ES		2258	21.69	-0.10							1.0
BHL	BZ	88	12	EP		2258	17.78	0.04							1.0
HWQ	BZ	136	19	EP		2258	25.49	0.12							1.0

January 11 2011 Hour: 1:53 52.4 Lat: 33.26N Lon: 35.27E Depth: 2 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.0 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	20	218	EP		153	55.67	0.01	35						1.0
NAQL	SN	20	218	ES		153	58.11	0.00							1.0
DQRL	SZ	56	29	EP		154	1.42	-0.03							1.0
DQRL	SN	56	29	ES		154	8.22	0.03							1.0
BHL	BZ	79	26	EP		154	5.19	0.01							1.0
BHL	BE	79	26	ES		154	14.65	-0.02							1.0
HWQ	BZ	129	29	EP		154	13.05	0.00							1.0

January 11 2011 Hour: 2:0 43.4 Lat: 33.13N Lon: 35.47E Depth: 0 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.2 secs

**SOUTH LEBANON**

Earthquake was felt

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	31	268	EP		2 0	48.12	-0.21	56						1.0
NAQL	SN	31	268	ES		2 0	51.99	0.02							1.0
DQRL	SZ	65	8	EP		2 0	53.92	0.02							1.0
DQRL	SN	65	8	ES		2 1	1.66	0.01							1.0
BHL	BZ	88	11	EP		2 0	57.57	-0.04							1.0
HWQ	BZ	135	19	EP		2 1	5.20	-0.03							1.0
FKH	SZ	152	35	EP		2 1	7.68	0.01							1.0

January 11 2011 Hour: 10:58 35.2 Lat: 33.12N Lon: 35.47E Depth: 0 Agency: REL Local  
Magnitudes: 2.9MC REL Rms: 0.2 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	30	269	EP		1058	39.94	-0.18	50						1.0
NAQL	SN	30	269	ES		1058	43.72	-0.01							1.0
DQRL	SZ	65	9	EP		1058	45.74	-0.04	50						1.0
DQRL	SN	65	9	ES		1058	53.52	-0.06							1.0
BHL	BZ	88	11	EP		1058	49.54	0.04							1.0
HWQ	BZ	136	19	EP		1058	57.10	-0.02							1.0
FKH	SZ	152	35	EP		1058	59.59	0.04							1.0

January 11 2011 Hour: 11:28 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1128	31.41								
HWQ	BZ			EP		1128	39.04								

January 12 2011 Hour: 7:26 52.5 Lat: 33.12N Lon: 35.45E Depth: 0 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.3 secs

**SOUTH LEBANON**

Earthquake was felt

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	29	271	EP		726	57.15	0.03	60						1.0
NAQL	SN	29	271	ES		727	0.52	-0.02							1.0
DQRL	SZ	67	10	EP		727	3.11	-0.11							1.0
DQRL	SN	67	10	ES		727	11.18	0.02							1.0
BHL	BZ	90	12	EP		727	6.85	-0.10							1.0
HWQ	BZ	137	20	EP		727	14.56	-0.01							1.0
FKH	SZ	154	35	EP		727	16.99	-0.05							1.0

January 12 2011 Hour: 7:41 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		741	34.14								
HWQ	BZ			EP		741	36.65								



January 12 2011 Hour: 8:10 14.4 Lat: 33.13N Lon: 35.46E Depth: 0 Agency: REL Local  
Magnitudes: 3.2MC REL Rms: 0.1 secs

**SOUTH LEBANON**

**Earthquake was felt**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	30	267	EP		810	19.20	0.03							1.0
NAQL	SN	30	267	ES		810	22.70	-0.03							1.0
DQRL	SZ	65	9	EP		810	24.81	0.00	77						1.0
DQRL	SN	65	9	ES		810	32.49	-0.04							1.0
BHL	BZ	88	12	EP		810	28.56	0.03	66						1.0
HWQ	BZ	135	19	EP		810	36.11	-0.06							1.0
FKH	SZ	152	35	EP		810	38.65	0.01							1.0

January 12 2011 Hour: 12:44 53.1 Lat: 33.12N Lon: 35.47E Depth: 0 Agency: REL Local  
Magnitudes: 3.3MC REL Rms: 0.3 secs

**SOUTH LEBANON**

**Earthquake was felt**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	30	270	EP		1244	57.95	-0.05							1.0
NAQL	SN	30	270	ES		1245	1.60	-0.03							1.0
DQRL	SZ	66	8	EP		1245	3.68	-0.03	88						1.0
DQRL	SN	66	8	ES		1245	11.63	0.07							1.0
BEYL	BZ	84	2	EP		1245	6.54	-0.03							1.0
BHL	BZ	89	11	EP		1245	7.42	-0.01	79						1.0
BHL	BE	89	11	ES		1245	18.02	0.00							1.0
HWQ	BZ	136	19	EP		1245	15.06	0.02							1.0
HWQ	BE	136	19	ES		1245	31.14	-0.13							1.0
FKH	SZ	152	35	EP		1245	17.49	0.04							1.0

January 12 2011 Hour: 12:59 5.0 Agency: REL Regional

**EMSC OT=12:59:05.0 34.92N 33.93E 54Km ML=3.2 CYPRUS REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		1259	31.99								
BHL	BZ			EP		1259	32.92								
HWQ	BZ			EP		1259	34.33								
FKH	SZ			EP		1259	39.85								

January 12 2011 Hour: 21:32 54.0 Agency: REL Distant

**EMSC OT=21:32:54.0 27.00N 139.92E 523Km Mw=6.5 BONIN ISLANDS**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		2144	37.45								
HWQ	BZ			EP		2144	38.43								
BHL	BZ			EP		2144	40.41								
BEYL	BZ			EP		2144	40.93								
DQRL	SZ			EP		2144	41.49								

January 13 2011 Hour: 0:31 16.8 Lat: 35.16N Lon: 36.76E Depth: 0 Agency: REL Regional  
Magnitudes: 3.5MC REL Rms: 0.3 secs

**EMSC OT=00:31:15.0 35.23N 36.79E 2Km ML=3.5 SYRIA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	107	198	EP		031	33.97	-0.02							1.0
FKH	SE	107	198	ES		031	46.64	-0.11							1.0
HWQ	BZ	123	218	EP		031	36.75	0.08	112						1.0
HWQ	BN	123	218	ES		031	51.39	-0.02							1.0
BHL	BZ	173	216	EP		031	44.11	0.02							1.0
BEYL	BZ	185	220	EP		031	45.68	-0.05							1.0
DQRL	SZ	195	214	EP		031	47.33	0.18							1.0

January 13 2011 Hour: 23: 7 10.3 Agency: REL Regional

EMSC OT=23:07:10.3 33.91N 33.68E 40Km ML=3.3 EASTERN MEDN SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		23	7	35.43							
BHL	BZ			EP		23	7	35.59							
HWQ	BZ			EP		23	7	40.31							
FKH	SZ			EP		23	7	45.92							

January 15 2011 Hour: 4: 6 47.6 Lat: 33.12N Lon: 35.39E Depth: 10 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.1 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	23	270	EP		4	6	51.70-0.02	24						1.0
NAQL	SN	23	270	ES		4	6	54.75	0.00						1.0
DQRL	SZ	68	14	EP		4	6	58.72	0.05						1.0
DQRL	SN	68	14	ES		4	7	6.82-0.02							1.0
BHL	BZ	91	16	EP		4	7	2.30	0.09						1.0
HWQ	BZ	139	22	EP		4	7	9.18-0.10							1.0

January 15 2011 Hour: 10:13 28.3 Lat: 34.40N Lon: 36.90E Depth: 4 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.1 secs

NEBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	48	249	EP		1013	35.97-0.09	56							1.0
FKH	SE	48	249	ES		1013	41.82-0.01								1.0
HWQ	BZ	88	261	EP		1013	42.60	0.03							1.0
HWQ	BN	88	261	ES		1013	53.17	0.02							1.0
TZHL	BZ	111	238	EP		1013	46.36	0.17							1.0
DQRL	SZ	145	238	EP		1013	51.02-0.11								1.0

January 15 2011 Hour: 18:15 31.8 Lat: 33.86N Lon: 35.92E Depth: 7 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.0 secs

CENTRAL BEKAA

Earthquake was felt

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
TZHL	BZ	3	265	EP		1815	33.30	0.02							1.0
BHL	BZ	25	281	EP		1815	36.07	0.03	42						1.0
BHL	BN	25	281	ES		1815	39.15-0.02								1.0
DQRL	SZ	37	242	EP		1815	37.87	0.02							1.0
DQRL	SN	37	242	ES		1815	42.27-0.04								1.0
HWQ	BZ	46	3	EP		1815	39.45	0.03							1.0
FKH	SZ	62	47	EP		1815	41.98	0.02							1.0
FKH	SN	62	47	ES		1815	49.42-0.05								1.0

January 16 2011 Hour: 8:38 51.2 Lat: 33.13N Lon: 35.40E Depth: 15 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.1 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	24	267	EP		838	55.71-0.10	42							1.0
NAQL	SN	24	267	ES		838	59.26	0.07							1.0
DQRL	SZ	66	14	EP		839	1.84-0.10								1.0
DQRL	SN	66	14	ES		839	9.80-0.05								1.0
BHL	BZ	89	15	EP		839	5.42	0.06							1.0
BHL	BN	89	15	ES		839	15.80	0.00							1.0
TZHL	BZ	93	29	EP		839	5.82-0.05								1.0
HWQ	BZ	137	22	EP		839	12.60	0.17							1.0
FKH	SZ	155	37	EP		839	15.09	0.00							1.0

**January 16 2011 Hour: 14:39 21.2 Lat: 33.83N Lon: 35.90E Depth: 7 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.0 secs**

**CENTRAL BEKAA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
TZHL	BZ	3	334	EP		1439	22.55	-0.08	56						1.0
TZHL	BN	3	334	ES		1439	23.73	0.04							1.0
BHL	BZ	24	289	EP		1439	25.23	-0.07	44						1.0
BHL	BN	24	289	ES		1439	28.38	0.04							1.0
DQRL	SZ	34	245	EP		1439	26.83	0.06	42						1.0
DQRL	SN	34	245	ES		1439	30.88	-0.02							1.0
HWQ	BZ	50	5	EP		1439	29.30	-0.01							1.0
FKH	SZ	66	46	EP		1439	31.90	0.03							1.0

**January 16 2011 Hour: 15:35 11.0 Agency: REL Regional**

**EMSC OT=15:35:11.0 35.06N 33.96E 30Km ML=3.1 CYPRUS REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1535	39.20								
HWQ	BZ			EP		1535	40.74								
DQRL	SZ			EP		1535	41.61								
TZHL	BZ			EP		1535	42.52								
FKH	SZ			EP		1535	46.04								

**January 18 2011 Hour: 20:23 25.0 Agency: REL Distant**

**EMSC OT=20:23:25.0 28.81N 63.97E 80Km Mw=7.2 PAKISTAN**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		2028	36.02								
HWQ	BZ			EP		2028	38.50								
TZHL	BZ			EP		2028	41.02								
BHL	BZ			EP		2028	41.97								
DQRL	SZ			EP		2028	41.06								
BEYL	BZ			EP		2028	43.20								

**January 19 2011 Hour: 1:14 53.9 Lat: 33.79N Lon: 35.79E Depth: 1 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.0 secs**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
TZHL	BZ	11	51	EP		114	55.79	-0.01							1.0
TZHL	BN	11	51	ES		114	57.18	0.00							1.0
BHL	BZ	18	314	EP		114	56.77	0.00	33						1.0
BHL	BN	18	314	ES		114	58.87	0.00							1.0
DQRL	SZ	23	244	EP		114	57.57	-0.01							1.0
DQRL	SN	23	244	ES		115	0.29	0.01							1.0
HWQ	BZ	56	15	EP		115	2.91	0.01							1.0

**January 19 2011 Hour: 9:17 49.0 Agency: REL Distant**

**EMSC OT=09:17:49.0 42.01N 42.60E 2Km mb=5.3 GEORGIA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		920	6.01								

**January 19 2011 Hour: 9:38 27.3 Lat: 34.29N Lon: 36.68E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.9MC REL Rms: 0.1 secs**

**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	25	260	EP		938	31.30	-0.03	54						1.0
FKH	SN	25	260	ES		938	34.38	0.06							1.0
HWQ	BZ	67	269	EP		938	38.12	-0.03							1.0
HWQ	BN	67	269	ES		938	46.15	-0.04							1.0
TZHL	BZ	87	237	EP		938	41.19	-0.16							1.0
BHL	BZ	104	246	EP		938	44.04	0.06							1.0
DQRL	SZ	121	238	EP		938	46.90	0.12							1.0

January 19 2011 Hour: 12:10 36.4 Lat: 33.90N Lon: 35.83E Depth: 3 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
TZHL	BZ	7	131	EP		1210	37.64	-0.07							1.0
TZHL	BE	7	131	ES		1210	38.71	0.04							1.0
BHL	BZ	16	273	EP		1210	39.12	-0.02	37						1.0
BHL	BN	16	273	ES		1210	41.15	0.00							1.0
DQRL	SZ	32	229	EP		1210	41.68	0.03							1.0
DQRL	SN	32	229	ES		1210	45.52	0.00							1.0
HWQ	BZ	44	14	EP		1210	43.49	0.02							1.0

January 19 2011 Hour: 15: 4 33.5 Lat: 33.80N Lon: 35.77E Depth: 3 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
TZHL	BZ	13	57	EP		15 4	35.65	-0.01							1.0
TZHL	BN	13	57	ES		15 4	37.26	0.01							1.0
BHL	BZ	16	318	EP		15 4	36.18	-0.01	37						1.0
BHL	BN	16	318	ES		15 4	38.18	0.01							1.0
DQRL	SZ	21	242	EP		15 4	37.01	0.04							1.0
DQRL	SN	21	242	ES		15 4	39.51	-0.02							1.0
HWQ	BZ	56	17	EP		15 4	42.55	0.00							1.0

January 19 2011 Hour: 22:30 46.0 Agency: REL Regional  
EMSC OT=22:30:46.0 36.12N 31.25E 40Km ML=3.8 WESTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		2231	48.72								
HWQ	BZ			EP		2231	49.77								
DQRL	SZ			EP		2231	49.95								
NAQL	SZ			EP		2231	50.84								

January 20 2011 Hour: 6:19 20.0 Lat: 33.12N Lon: 35.45E Depth: 4 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.3 secs

SOUTH LEBANON

Earthquake was felt

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	29	268	EP		619	24.66	-0.05	59						1.0
NAQL	SN	29	268	ES		619	28.16	-0.01							1.0
DQRL	SZ	65	10	EP		619	30.57	-0.04							1.0
DQRL	SN	65	10	ES		619	38.41	-0.04							1.0
BHL	BZ	89	12	EP		619	34.27	-0.06							1.0
HWQ	BZ	136	20	EP		619	41.78	0.10							1.0
HWQ	BN	136	20	ES		619	57.62	-0.09							1.0
FKH	SZ	153	35	EP		619	44.28	0.11							1.0

January 20 2011 Hour: 9:56 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		957	27.45								
HWQ	BZ			EP		957	34.82								

January 20 2011 Hour: 14:11 48.5 Lat: 34.01N Lon: 35.75E Depth: 5 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.0 secs

KESROUANE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	15	219	EP		1411	51.11	0.00	43						1.0
BHL	BN	15	219	ES		1411	53.07	0.01							1.0
TZHL	BZ	21	144	EP		1411	52.02	0.02							1.0
TZHL	BN	21	144	ES		1411	54.58	-0.01							1.0
HWQ	BZ	35	31	EP		1411	54.19	-0.02							1.0
DQRL	SZ	38	207	EP		1411	54.70	0.04							1.0
DQRL	SN	38	207	ES		1411	59.17	-0.05							1.0

January 20 2011 Hour: 14:57 32.3 Lat: 33.12N Lon: 35.47E Depth: 0 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.2 secs

**SOUTH LEBANON**

**Earthquake was felt**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	66	8	EP		1457	42.85	-0.02	56						1.0
DQRL	SN	66	8	ES		1457	50.73	0.03							1.0
BHL	BZ	89	11	EP		1457	46.46	-0.12							1.0
HWQ	BZ	136	19	EP		1457	54.20	0.00							1.0
HWQ	BN	136	19	ES		1458	10.39	-0.02							1.0
FKH	SZ	152	35	EP		1457	56.59	-0.03							1.0

January 20 2011 Hour: 16:15 6.4 Lat: 33.12N Lon: 35.45E Depth: 0 Agency: REL Local  
Magnitudes: 3.2MC REL Rms: 0.1 secs

**SOUTH LEBANON**

**Earthquake was felt**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	29	269	EP		1615	10.92	-0.12							1.0
NAQL	SN	29	269	ES		1615	14.46	-0.05							1.0
DQRL	SZ	66	10	EP		1615	16.85	-0.11	80						1.0
DQRL	SN	66	10	ES		1615	24.78	-0.03							1.0
BHL	BZ	89	12	EP		1615	20.79	0.10							1.0
TZHL	BZ	91	26	EP		1615	21.12	0.07							1.0
HWQ	BZ	136	19	EP		1615	28.32	0.00							1.0
FKH	SZ	153	35	EP		1615	30.84	0.05							1.0

January 20 2011 Hour: 18:25 28.8 Lat: 33.12N Lon: 35.47E Depth: 7 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.1 secs

**SOUTH LEBANON**

**Earthquake was felt**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	30	269	EP		1825	33.58	-0.30							1.0
NAQL	SN	30	269	ES		1825	37.61	-0.01							1.0
DQRL	SZ	65	8	EP		1825	39.33	-0.10	54						1.0
DQRL	SN	65	8	ES		1825	47.29	0.01							1.0
BHL	BZ	88	11	EP		1825	43.09	-0.03							1.0
HWQ	BZ	136	19	EP		1825	50.30	0.11							1.0

January 20 2011 Hour: 19:42 31.9 Lat: 33.12N Lon: 35.43E Depth: 11 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.0 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	27	269	EP		1942	36.75	0.05	48						1.0
NAQL	SN	27	269	ES		1942	40.19	-0.03							1.0
DQRL	SZ	66	11	EP		1942	42.72	-0.04							1.0
DQRL	SN	66	11	ES		1942	50.79	0.02							1.0
BHL	BZ	89	13	EP		1942	46.26	0.03							1.0
HWQ	BZ	137	20	EP		1942	53.20	-0.04							1.0

January 20 2011 Hour: 21:38 50.0 Lat: 33.13N Lon: 35.44E Depth: 0 Agency: REL Local  
Magnitudes: 3.8MC REL Rms: 0.2 secs

**SOUTH LEBANON**

**Earthquake was felt**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	28	268	EP		2138	54.60	0.07							1.0
NAQL	SN	28	268	ES		2138	57.82	-0.05							1.0
DQRL	SZ	66	11	EP		2139	0.54	-0.06							1.0
DQRL	SN	66	11	ES		2139	8.40	-0.03							1.0
BEYL	BZ	83	3	EP		2139	3.43	0.02							1.0
BHL	BZ	89	13	EP		2139	4.20	-0.13	162						1.0
TZHL	BZ	91	27	EP		2139	4.74	0.00							1.0
HWQ	BZ	136	20	EP		2139	11.98	0.05	159						1.0
FKH	SZ	153	36	EP		2139	14.54	0.09							1.0

January 20 2011 Hour: 21:45 24.7 Lat: 33.09N Lon: 35.42E Depth: 20 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.1 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	26	276	EP		2145	29.83	-0.02	40						1.0
NAQL	SN	26	276	ES		2145	33.71	0.03							1.0
DQRL	SZ	69	12	EP		2145	35.72	-0.25							1.0
DQRL	SN	69	12	ES		2145	44.34	0.02							1.0
BHL	BZ	93	14	EP		2145	39.48	0.13							1.0
TZHL	BZ	95	27	EP		2145	39.84	0.08							1.0
HWQ	BZ	140	20	EP		2145	46.30	0.01							1.0

January 20 2011 Hour: 21:55 23.6 Lat: 33.15N Lon: 35.36E Depth: 19 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	21	261	EP		2155	28.12	-0.04	24						1.0
NAQL	SN	21	261	ES		2155	31.54	0.02							1.0
DQRL	SZ	65	17	EP		2155	34.21	0.00							1.0
DQRL	SN	65	17	ES		2155	42.04	-0.01							1.0
BHL	BZ	88	18	EP		2155	37.61	-0.01							1.0
HWQ	BZ	137	23	EP		2155	44.76	0.04							1.0

January 20 2011 Hour: 22:18 58.6 Lat: 33.12N Lon: 35.46E Depth: 0 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.2 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	29	269	EP		2219	2.98	-0.39							1.0
NAQL	SN	29	269	ES		2219	6.86	-0.03							1.0
DQRL	SZ	66	9	EP		2219	8.99	-0.24	58						1.0
DQRL	SN	66	9	ES		2219	17.03	-0.05							1.0
BHL	BZ	89	12	EP		2219	12.92	-0.03							1.0
TZHL	BZ	91	26	EP		2219	13.61	0.31							1.0
HWQ	BZ	136	19	EP		2219	20.78	0.20							1.0

January 20 2011 Hour: 22:22 34.1 Lat: 33.12N Lon: 35.45E Depth: 0 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.1 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	29	270	EP		2222	38.78	0.06							1.0
NAQL	SN	29	270	ES		2222	42.13	-0.02							1.0
DQRL	SZ	66	10	EP		2222	44.57	-0.19	42						1.0
DQRL	SN	66	10	ES		2222	52.66	-0.01							1.0
BHL	BZ	89	12	EP		2222	48.67	0.18							1.0
TZHL	BZ	92	26	EP		2222	48.93	0.08							1.0
HWQ	BZ	137	20	EP		2222	56.06	-0.01							1.0

January 21 2011 Hour: 0:50 46.2 Lat: 33.16N Lon: 35.41E Depth: 12 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.2 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	26	260	EP		050	50.82	0.02							1.0
NAQL	SN	26	260	ES		050	54.19	-0.03							1.0
DQRL	SZ	62	13	EP		050	56.53	0.10	35						1.0
DQRL	SN	62	13	ES		051	3.99	-0.04							1.0
BHL	BZ	86	15	EP		051	0.08	0.23							1.0
HWQ	BZ	133	22	EP		051	6.64	-0.28							1.0

**January 21 2011 Hour: 4:11 48.5 Lat: 33.12N Lon: 35.46E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.2MC REL Rms: 0.3 secs**

**SOUTH LEBANON**

**Earthquake was felt**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	30	271	EP		411	53.19	-0.14							1.0
NAQL	SN	30	271	ES		411	56.87	-0.02							1.0
DQRL	SZ	66	9	EP		411	59.11	-0.10	74						1.0
DQRL	SN	66	9	ES		412	7.14	0.01							1.0
BHL	BZ	89	12	EP		412	2.61	-0.32							1.0
TZHL	BZ	91	25	EP		412	3.72	0.47							1.0
HWQ	BZ	137	19	EP		412	10.70	0.16							1.0

**January 21 2011 Hour: 4:45 57.9 Lat: 33.11N Lon: 35.41E Depth: 18 Agency: REL Local**  
**Magnitudes: 2.9MC REL Rms: 0.1 secs**

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	25	272	EP		446	2.75	-0.05							1.0
NAQL	SN	25	272	ES		446	6.51	0.05							1.0
DQRL	SZ	68	13	EP		446	8.64	-0.21	51						1.0
DQRL	SN	68	13	ES		446	16.98	0.00							1.0
BHL	BZ	91	14	EP		446	12.32	0.07							1.0
TZHL	BZ	94	28	EP		446	12.71	0.01							1.0
HWQ	BZ	139	21	EP		446	19.42	0.14							1.0

**January 21 2011 Hour: 7:25 49.0 Agency: REL Regional**

**EMSC OT=07:25:49.0 35.46N 31.70E 40Km ML=4.0 CYPRUS REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		726	42.49								
DQRL	SZ			EP		726	43.18								
HWQ	BZ			EP		726	44.09								
FKH	SZ			EP		726	49.36								

**January 21 2011 Hour: 14:16 56.1 Lat: 33.40N Lon: 35.61E Depth: 10 Agency: REL Local**  
**Magnitudes: 2.7MC REL Rms: 0.0 secs**

**SAIDA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	23	63	EP		1417	0.39	0.02	39						1.0
RCY	SN	23	63	ES		1417	3.49	-0.01							1.0
DQRL	SZ	34	354	EP		1417	1.93	0.01							1.0
DQRL	SN	34	354	ES		1417	6.22	0.02							1.0
BHL	BZ	56	4	EP		1417	5.30	-0.05							1.0
HWQ	BZ	102	18	EP		1417	12.39	0.01							1.0

**January 21 2011 Hour: 14:49 47.3 Lat: 33.87N Lon: 35.85E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.2MC REL Rms: 0.1 secs**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
TZHL	BZ	4	118	EP		1449	47.92	-0.03							1.0
BHL	BZ	19	281	EP		1449	50.22	-0.10	79						1.0
DQRL	SZ	32	234	EP		1449	52.56	0.08							1.0
DQRL	SN	32	234	ES		1449	56.31	0.02							1.0
RCY	SZ	42	182	EP		1449	54.15	0.07	72						1.0
RCY	SN	42	182	ES		1449	59.00	-0.07							1.0
HWQ	BZ	46	11	EP		1449	54.77	0.05	78						1.0
HWQ	BN	46	11	ES		1450	0.18	0.00							1.0
FKH	SZ	66	51	EP		1449	57.98	-0.02							1.0



January 21 2011 Hour: 17:26 25.3 Lat: 33.09N Lon: 35.47E Depth: 0 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.1 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	57	37	EP		1726	34.42	-0.08	37						1.0
RCY	SN	57	37	ES		1726	41.31	0.03							1.0
DQRL	SZ	69	8	EP		1726	36.44	-0.07							1.0
DQRL	SN	69	8	ES		1726	44.75	-0.02							1.0
BHL	BZ	92	11	EP		1726	40.25	0.04							1.0
HWQ	BZ	139	18	EP		1726	47.86	0.11							1.0

January 22 2011 Hour: 0:3 8.5

Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	BZ			EP		0 3	20.38								
DQRL	SZ			EP		0 3	24.14								
BHL	BZ			EP		0 3	27.35								
HWQ	BZ			EP		0 3	33.94								

January 22 2011 Hour: 6:44 12.8 Lat: 33.84N Lon: 35.82E Depth: 11 Agency: REL Local  
Magnitudes: 2.3MC REL Rms: 0.0 secs

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
TZHL	BZ	6	71	EP		644	15.07	0.00							1.0
BHL	BZ	17	295	EP		644	16.25	0.04	21						1.0
BHL	BN	17	295	ES		644	18.74	-0.02							1.0
DQRL	SZ	28	238	EP		644	17.65	-0.02							1.0
DQRL	SE	28	238	ES		644	21.32	0.01							1.0
HWQ	BZ	50	13	EP		644	21.08	-0.01							1.0

January 22 2011 Hour: 12:23 10.1 Lat: 33.12N Lon: 35.46E Depth: 0 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.1 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	55	40	EP		1223	18.85	-0.03	40						1.0
RCY	SN	55	40	ES		1223	25.39	0.01							1.0
DQRL	SZ	66	9	EP		1223	20.69	0.00							1.0
DQRL	SN	66	9	ES		1223	28.55	0.00							1.0
BHL	BZ	89	12	EP		1223	24.44	0.03							1.0
HWQ	BZ	136	19	EP		1223	32.02	0.00							1.0

January 22 2011 Hour: 13:19 39.5 Lat: 33.14N Lon: 35.42E Depth: 0 Agency: REL Local  
Magnitudes: 2.9MC REL Rms: 0.2 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	55	44	EP		1319	48.33	-0.04	52						1.0
RCY	SN	55	44	ES		1319	54.89	-0.03							1.0
DQRL	SZ	64	12	EP		1319	49.94	0.11							1.0
DQRL	SN	64	12	ES		1319	57.55	0.08							1.0
BHL	BZ	87	14	EP		1319	53.60	0.02							1.0
BHL	BN	87	14	ES		1320	4.04	0.06							1.0
HWQ	BZ	135	21	EP		1320	1.26	-0.01							1.0

January 22 2011 Hour: 13:28 44.3 Lat: 33.10N Lon: 35.50E Depth: 0 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
RCY	SZ	54	35	EP		1328	52.95	0.01							1.0
RCY	SN	54	35	ES		1328	59.35	-0.01							1.0
DQRL	SZ	67	5	EP		1328	55.12	-0.01	30						1.0
DQRL	SN	67	5	ES		1329	3.18	0.01							1.0
HWQ	BZ	137	17	EP	C	1329	6.31	0.00							1.0



**January 22 2011 Hour: 16:18 30.7 Lat: 33.79N Lon: 35.77E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.0MC REL Rms: 0.1 secs**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
TZHL	BZ	13	54	EP		1618	33.00	0.09							1.0
BHL	BZ	17	321	EP		1618	33.32	-0.13	59						1.0
DQRL	SZ	20	244	EP		1618	33.98	-0.06							1.0
DQRL	SE	20	244	ES		1618	36.43	-0.06							1.0
BEYL	BZ	27	290	EP		1618	35.36	0.24							1.0
RCY	SZ	33	169	EP		1618	35.99	-0.04	63						1.0
RCY	SN	33	169	ES		1618	39.93	-0.02							1.0
HWQ	BZ	57	17	EP		1618	39.78	-0.14							1.0
HWQ	BN	57	17	ES		1618	46.73	0.01							1.0
FKH	SZ	78	49	EP		1618	43.36	0.02							1.0
NAQL	SZ	94	218	EP		1618	46.07	0.10							1.0

**January 23 2011 Hour: 15:14 53.2 Lat: 33.79N Lon: 35.77E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.9MC REL Rms: 0.0 secs**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
TZHL	BZ	13	53	EP		1514	55.32	0.02							1.0
BHL	BZ	17	320	EP		1514	55.87	-0.04	56						1.0
BHL	BN	17	320	ES		1514	57.95	0.00							1.0
DQRL	SZ	21	245	EP		1514	56.53	0.03							1.0
RCY	BZ	33	169	EP		1514	58.45	0.02							1.0
RCY	BN	33	169	ES		1515	2.31	-0.02							1.0
HWQ	BZ	57	16	EP		1515	2.35	0.00							1.0

**January 23 2011 Hour: 19:33 3.0 Agency: REL Regional**  
**EMSC OT=19:34:46.5 36.62N 26.18E 179Km ML=3.2 DODECANESE ISLANDS**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1934	58.39								
DQRL	SZ			EP		1934	56.33								
HWQ	BZ			EP		1934	56.55								
RCY	BZ			EP		1934	58.94								
FKH	SZ			EP		1935	1.02								

**January 24 2011 Hour: 10:17 0.0 Agency: REL Local**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1017	57.04								
RCY	SZ			EP		1017	56.37								

**January 24 2011 Hour: 15:31 0.0 Agency: REL Local**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		1531	35.73								
RCY	SZ			EP		1531	33.14								

**January 25 2011 Hour: 0:10 49.2 Lat: 32.62N Lon: 35.17E Depth: 9 Agency: REL Regional**  
**Magnitudes: 2.8MC REL Rms: 0.2 secs**

**NORTH GALILEE**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	55	357	EP		010	58.46	0.17	43						1.0
NAQL	SN	55	357	ES		011	5.02	0.02							1.0
RCY	BZ	115	32	EP		011	7.29	-0.20							1.0
DQRL	SZ	126	17	EP		011	9.01	-0.03							1.0
DQRL	SN	126	17	ES		011	23.73	0.02							1.0
HWQ	BZ	198	21	EP		011	18.97	0.05							1.0

January 25 2011 Hour: 1:15 18.7 Lat: 33.11N Lon: 35.47E Depth: 0 Agency: REL Local  
Magnitudes: 3.1MC REL Rms: 0.1 secs

**SOUTH LEBANON**

**Earthquake was felt**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ	31	272	EP		115	23.69	0.03							1.0
NAQL	SN	31	272	ES		115	27.29	-0.06							1.0
RCY	SZ	55	38	EP		115	27.48	-0.08	70						1.0
RCY	SN	55	38	ES		115	34.08	-0.05							1.0
DQRL	SZ	67	8	EP		115	29.48	-0.04							1.0
BHL	BZ	90	11	EP		115	33.38	0.15							1.0
BHL	BN	90	11	ES		115	43.97	-0.02							1.0
HWQ	BZ	137	19	EP		115	40.87	0.07							1.0
FKH	SZ	153	34	EP		115	43.17	0.00							1.0

January 25 2011 Hour: 6:49 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		649	50.42								
HWQ	BZ			EP		649	49.60								

January 25 2011 Hour: 15:27 10.1 Lat: 33.09N Lon: 35.52E Depth: 0 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.4 secs

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	54	33	EP		1527	18.49	-0.25							1.0
RCY	SN	54	33	ES		1527	25.13	-0.03							1.0
DQRL	SZ	68	4	EP		1527	21.11	0.01	41						1.0
DQRL	SN	68	4	ES		1527	29.21	-0.05							1.0
BHL	BZ	91	8	EP		1527	24.73	-0.03							1.0
HWQ	BZ	138	17	EP		1527	32.37	0.15							1.0

January 26 2011 Hour: 19:58 50.0 Agency: REL Regional

**EMSC OT=19:58:50.0 35.66N 32.42E 68Km ML=3.3 CYPRUS REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1959	34.97								
DQRL	SZ			EP		1959	35.69								
HWQ	BZ			EP		1959	36.19								
RCY	SZ			EP		1959	40.93								

January 26 2011 Hour: 21: 0 9.1 Lat: 34.23N Lon: 34.44E Depth: 14 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.4 secs

**OFFSHORE CENTRAL LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	118	108	EP		21 0	27.37	0.09	56						1.0
BHL	BN	118	108	ES		21 0	39.80	-0.93							1.0
DQRL	SZ	120	119	EP		21 0	27.69	0.15							1.0
HWQ	BZ	139	87	EP		21 0	30.73	0.35							1.0
HWQ	BN	139	87	ES		21 0	46.22	0.10							1.0
RCY	SZ	153	122	EP		21 0	32.67	0.23							1.0
RCY	SN	153	122	ES		21 0	49.75	0.05							1.0
FKH	SZ	182	89	EP		21 0	36.51	0.42							1.0

January 27 2011 Hour: 8:38 29.0 Agency: REL Distant

**EMSC OT=08:38:29.0 28.26N 59.01E 12Km Mw=6.0 SOUTHEASTERN IRAN**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		843	7.87								
RCY	SZ			EP		843	9.38								
HWQ	BZ			EP		843	9.38								
BHL	BZ			EP		843	11.01								
DQRL	SZ			EP		843	12.77								

**January 27 2011 Hour: 10:22 14.9 Lat: 34.46N Lon: 36.68E Depth: 8 Agency: REL Local**  
**Magnitudes: 3.0MC REL Rms: 0.2 secs**

**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	71	254	EP		1022	26.29	-0.12	53						1.0
HWQ	BN	71	254	ES		1022	34.98	0.07							1.0
DQRL	SN	132	231	ES		1022	50.88	-0.17							1.0
RCY	SZ	132	217	EP		1022	35.52	-0.18							1.0
RCY	SN	132	217	ES		1022	51.18	0.10							1.0
DQRL	SZ	132	231	EP		1022	35.98	0.30							1.0

**January 28 2011 Hour: 12:41 2.0 Agency: REL Distant**

**EMSC OT=12:41:02.0 19.08S 178.19W 611Km mb=5.0 FIJI REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1255	58.13								
HWQ	BZ			EP		1255	58.49								
BHL	BZ			EP		1255	59.64								
RCY	SZ			EP		1255	59.60								
DQRL	SZ			EP		1256	0.16								

**January 28 2011 Hour: 15:29 0.0 Agency: REL Local**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		1529	37.66								
DQRL	SZ			EP		1529	39.33								

**January 29 2011 Hour: 2:41 20.0 Agency: REL Distant**

**EMSC OT=02:41:20.0 17.77S 178.09W 604Km mb=4.9 FIJI REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		259	51.78								
HWQ	BZ			EP		259	52.07								
BHL	BZ			EP		259	53.16								
DQRL	SZ			EP		259	53.95								

**January 29 2011 Hour: 6:55 25.0 Agency: REL Distant**

**EMSC OT=06:55:25.0 70.95N 06.75W 2Km Mw=6.2 JAN MAYEN**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		7 3	18.68								
BHL	BZ			EP		7 3	18.65								

**January 29 2011 Hour: 14:59 47.2 Lat: 33.78N Lon: 35.77E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.9MC 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	17	321	EP		1459	50.04	0.00							1.0
DQRL	SZ	21	245	EP		1459	50.62	0.03	49						1.0
DQRL	SN	21	245	ES		1459	53.04	-0.02							1.0
RCY	SZ	32	170	EP		1459	52.44	-0.03							1.0
RCY	SN	32	170	ES		1459	56.36	0.02							1.0
HWQ	BZ	57	16	EP		1459	56.46	0.00							1.0

**January 31 2011 Hour: 6:3 23.0 Agency: REL Distant**

**EMSC OT=06:03:23.0 21.87S 175.57W 40Km Mw=6.0 TONGA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		623	9.93								
RCY	BZ			EP		623	9.99								
BHL	BZ			EP		623	11.07								

January 31 2011 Hour: 10:17 36.0 Lat: 34.54N Lon: 36.87E Depth: 0 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.1 secs

NEBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	90	251	EP		1017	50.37	-0.13	44						1.0
HWQ	BN	90	251	ES		1018	1.20	-0.01							1.0
BHL	BZ	132	238	EP		1017	57.63	0.24							1.0
RCY	SZ	150	220	EP		1017	59.95	-0.08							1.0
RCY	SN	150	220	ES		1018	17.78	-0.02							1.0
DQRL	SZ	152	233	EP		1018	0.19	-0.01							1.0

January 31 2011 Hour: 11:31 4.3 Lat: 33.28N Lon: 33.62E Depth: 10 Agency: REL Regional  
Magnitudes: 3.5MC REL Rms: 0.4 secs

EMSC OT=11:31:05.0 33.31N 33.70E 30Km ML=3.5 EASTERN MED SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	187	75	EP		1131	32.35	-0.20							1.0
BHL	BZ	201	69	EP		1131	34.30	0.03	91						1.0
RCY	SZ	207	83	EP		1131	35.26	0.15							1.0
HWQ	BZ	242	62	EP		1131	38.82	-0.58	101						1.0

# Epicentral Map of Lebanon

## January 2011

