

Republic of Lebanon
National Council for Scientific Research

Provisional Seismological Bulletin

from the

NATIONAL SEISMIC NETWORK

August

2004

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 Vp/Vs 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 and the Syrian seismic network SNSN 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	3414.13N	3624.11E	1170	FAKEHEH	Scheduled 2003
RCY	3329.08N	3549.13E	1360	RACHAYA	Scheduled 2003
DWR	3323.13N	3524.08E	420	DWEIR	Scheduled 2003

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 will be available for download in pdf format on:
<http://www.cnrs.edu.lb/geophysicalresearch/>

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: GRL throughout the bulletin, aka. Geophysical Research Lebanon

MAGNITUDES: Up to 3 different magnitudes can be given followed by type and reporting agency, e.g. 3.1 MC GRL - coda magnitude calculated according to GRL standard parameters.

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 ($0.5 \times (\text{peak to peak})$), (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.

August 1 2004 Hour: 21:22 38.9 Lat: 37.10N Lon: 38.22E Depth: 15 Agency: REL Regional
Magnitudes: 4.0MC REL Rms: 3.2 secs

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	374.4	214	EPN		2123	32.69	2.7							1.0
HWQ	SN	374.4	214	SN		2124	3.85	-4.0							1.0
BHL	SZ	423.8	214	EPN		2123	36.73	0.6							1.0
BHL	SE	423.8	214	SN		2124	22.57	4.0							1.0
MATL	SZ	478.9	214	EPN		2123	39.68	-3.2							1.0

August 2 2004 Hour: 7:29 33.3 Lat: 34.06N Lon: 35.33E Depth: 0 Agency: REL Local
Magnitudes: 2.3MC REL Rms: 0.9 secs

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	SZ	34.65	119	IPG		729	39.73	0.8	21			300	1	16.8	1.0
BHL	SN	34.65	119	ISG		729	42.37	-0.7							1.0
HWQ	SZ	62.07	67	IPG		729	42.21	-1.1							1.0
HWQ	SN	62.07	67	ISG		729	51.61	0.9							1.0

August 3 2004 Hour: 5:34 1.6 Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	SZ			EPN		535	21.34								
HWQ	SZ			EPN		535	21.41								

August 3 2004 Hour: 13:11 31.9 Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
MATL	SZ			EPN		1313	17.02								
BHL	SZ			EPN		1313	17.11								
BHL	SE			SN		1314	34.18								
HWQ	SZ			EPN		1313	17.25		315						
HWQ	SN			SN		1314	36.96								

August 4 2004 Hour: 3:1 8.9 Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
MATL	SZ			EPN		3 2	51.82								
BHL	SZ			EPN		3 2	51.13								
BHL	SN			SN		3 4	7.97								
HWQ	SZ			EPN		3 2	52.66		247						
HWQ	SE			SN		3 4	10.40								

August 4 2004 Hour: 4:19 48.2 Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
MATL	SZ			EPN		421	31.55								
BHL	SZ			EPN		421	31.09								
BHL	SN			SN		422	47.93								
HWQ	SZ			EPN		421	33.17		253						
HWQ	SE			SN		422	51.66								

August 4 2004 Hour: 18:57 49.4 Lat: 34.21N Lon: 35.44E Depth: 15 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.3 secs

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	SZ	39.29	150	IPG		1857	56.48	0.2	28			238	-91	9.7	1.0
BHL	SE	39.29	150	ISG		1858	1.21	0.0							1.0
HWQ	SZ	47.11	81	IPG		1857	57.59	0.2							1.0
HWQ	SE	47.11	81	ISG		1858	2.85	-0.4							1.0

August 5 2004 Hour: 1:9 9.0 Lat: 33.92N Lon: 36.00E Depth: 16 Agency: REL Local
Magnitudes: 2.4MC REL Rms: 0.0 secs

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	SZ	32.26	268	IPG		1 9	14.75	-0.1							1.0
BHL	SE	32.26	268	ISG		1 9	19.16	0.0							1.0
HWQ	SZ	40.50	353	IPG		1 9	16.05	0.1	26						1.0
HWQ	SE	40.50	353	ISG		1 9	21.14	0.0							1.0
MATL	SZ	78.34	233	IPG		1 9	21.44	0.0							1.0

August 7 2004 Hour: 10:04 45.6 Lat: 34.23N Lon: 35.44E Depth: 15 Agency: REL Local
 Magnitudes: 2.5MC REL Rms: 0.1 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ41.22 152 IPG 10 0 52.86 0.2 29 214 -99 25.0 1.0
 BHL SN41.22 152 ISG 10 0 57.79 -0.1 1.0
 HWQ SZ46.76 83 IPG 10 0 53.64 0.1 1.0
 HWQ SN46.76 83 ISG 10 0 59.19 -0.2 1.0

August 8 2004 Hour: 12:42 31.3 Lat: 32.44N Lon: 35.19E Depth: 20 Agency: REL Local
 Magnitudes: 3.8MC REL Rms: 0.5 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 MATL SZ117.5 6 IPG 1242 49.19 -0.3 1.0
 BHL SZ168.5 15 IPG 1242 56.81 -0.3 1.0
 BHL SN168.5 15 ISG 1243 17.31 1.1 1.0
 HWQ SZ216.1 19 IPG 1243 3.03 -1.1 142 1.0
 HWQ SN216.1 19 ISG 1243 28.98 0.6 1.0

August 9 2004 Hour: 9:28 35.7 Lat: 33.86N Lon: 36.22E Depth: 15 Agency: REL Local
 Magnitudes: 2.6MC REL Rms: 1.5 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ52.30 275 IPG 928 42.95 -1.4 1.0
 BHL SN52.30 275 ISG 928 49.17 -1.6 1.0
 HWQ SZ52.52 332 IPG 928 46.04 1.6 34 54 -97 44.4 1.0
 HWQ SN52.52 332 ISG 928 52.31 1.4 1.0

August 10 2004 Hour: 15:25 56.0 Lat: 34.16N Lon: 35.56E Depth: 15 Agency: REL Local
 Magnitudes: 2.6MC REL Rms: 0.0 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ29.37 163 IPG 15 3 1.30 0.0 1.0
 BHL SN29.37 163 ISG 15 3 5.30 0.0 1.0
 HWQ SZ37.84 69 IPG 15 3 2.55 0.0 32 79 -99 26.9 1.0
 HWQ SN37.84 69 ISG 15 3 7.38 0.0 1.0

August 11 2004 Hour: 15:48 16.4 Lat: 39.03N Lon: 39.97E Depth: 15 Agency: REL Regional
 Magnitudes: 4.8MC REL Rms: 1.5 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ638.7 216 EPN 1549 40.42 0.1 373 1.0
 HWQ SN638.7 216 SN 1550 40.14 -2.3 1.0
 BHL SZ688.2 216 EPN 1549 46.94 0.5 1.0
 BHL SE688.2 216 SN 1550 55.49 2.3 1.0
 MATL SZ743.2 216 EPN 1549 52.65 -0.6 1.0

August 13 2004 Hour: 20:31 22.3 Agency: REL Regional
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ EPN 2036 21.76
 BHL SZ EPN 2036 28.42
 MATL SZ EPN 2036 35.04

August 14 2004 Hour: 0:21 0.9 Agency: REL Regional
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ EPN 021 42.08
 BHL SZ EPN 021 48.68

August 14 2004 Hour: 20:39 24.9 Agency: REL Regional
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ EPN 2043 32.28
 BHL SZ EPN 2043 37.66
 MATL SZ EPN 2043 53.04

August 14 2004 Hour: 21:1 1.5 Agency: REL Regional
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ EPN 21 2 54.31
 HWQ SZ EPN 21 2 47.92

August 15 2004 Hour: 10:11 59.3 Lat: 34.12N Lon: 34.92E Depth: 15 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 1.9 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ71.96 109 IPG 1012 10.59 -0.3 38 234 -55 12.9 1.0
 BHL SE71.96 109 ISG 1012 22.55 3.1 1.0
 HWQ SZ96.14 79 IPG 1012 13.78 -0.7 1.0
 HWQ SE96.14 79 ISG 1012 23.52 -2.1 1.0

August 15 2004 Hour: 11:17 0.3 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ IPG 1118 2.48
 HWQ SZ IPG 1118 4.65
 BHL SN ISG 1118 8.59
 HWQ SE ISG 1118 12.62

August 15 2004 Hour: 15:17 0.7 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ IPG 1518 28.92
 HWQ SZ IPG 1518 30.53
 BHL SE ISG 1518 40.38
 HWQ SN ISG 1518 42.36

August 15 2004 Hour: 16:50 1.2 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ IPG 1651 39.35
 HWQ SE ISG 1651 53.44
 BHL SN ISG 1651 57.05

August 16 2004 Hour: 15:15 0.6 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ IPG 1516 12.01
 BHL SZ IPG 1516 9.62
 HWQ SN ISG 1516 17.37
 BHL SN ISG 1516 14.93

August 18 2004 Hour: 5:57 1.4 Agency: REL Regional
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ EPN 557 47.35 182
 HWQ SE SN 558 20.96
 BHL SZ EPN 557 49.99
 BHL SE SN 558 26.25
 MATL SZ EPN 557 53.83

August 18 2004 Hour: 6:8 1.6 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ IPG 6 9 7.87
 BHL SZ IPG 6 9 0.03
 HWQ SE ISG 6 9 14.10
 BHL SN ISG 6 9 10.11

August 18 2004 Hour: 15:25 0.9 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ IPG 1526 20.16
 HWQ SZ IPG 1526 20.92
 BHL SN ISG 1526 24.63
 HWQ SN ISG 1526 26.83

August 20 2004 Hour: 11: 8 42.4 Agency: REL Regional
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 MATL SZ EPN 1113 52.56
 BHL SZ EPN 1113 53.08
 HWQ SZ EPN 1113 55.26

August 21 2004 Hour: 15:36 47.1 Lat: 34.67N Lon: 36.28E Depth: 0 Agency: REL Local
 Magnitudes: 3.2MC REL Rms: 0.2 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ53.57 215 IPG 1536 55.80 0.1 72 35 0 20.6 1.0
 HWQ SE53.57 215 ISG 1537 1.87 -0.2 1.0
 BHL SZ103.0 214 IPG 1537 3.61 -0.1 1.0
 BHL SN103.0 214 ISG 1537 16.23 0.2 1.0

August 22 2004 Hour: 0:23 58.5 Lat: 34.46N Lon: 36.04E Depth: 0 Agency: REL Local
 Magnitudes: 2.6MC REL Rms: 0.5 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ22.09 202 IPG 024 1.86 -0.2 36 22 0 23.6 1.0
 HWQ SE22.09 202 ISG 024 4.08 -0.7 1.0
 BHL SZ71.27 210 IPG 024 10.27 0.2 1.0
 BHL SN71.27 210 ISG 024 19.23 0.7 1.0

August 24 2004 Hour: 14:41 0.5 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ IPG 1441 56.04
 HWQ SZ IPG 1441 59.92
 BHL SE ISG 1441 58.52
 HWQ SE ISG 1442 7.27

August 24 2004 Hour: 15:11 1.7 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SN ISG 1512 20.36
 BHL SN ISG 1512 18.12
 HWQ SZ IPG 1512 13.56

August 25 2004 Hour: 6:49 7.7 Lat: 33.86N Lon: 35.34E Depth: 46 Agency: REL Local
 Magnitudes: 2.7MC REL Rms: 0.5 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ29.36 80 IPG 649 15.10 -0.7 40 1.0
 BHL SN29.36 80 ISG 649 22.13 0.4 1.0
 MATL SZ41.03 182 IPG 649 16.62 0.0 1.0
 HWQ SZ72.68 50 IPG 649 20.81 0.7 1.0
 HWQ SN72.68 50 ISG 649 29.01 -0.4 1.0

August 25 2004 Hour: 10:18 -1.3 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ IPG 1018 27.67
 HWQ SE ISG 1018 41.08
 BHL SZ IPG 1018 24.81
 BHL SN ISG 1018 37.93

August 25 2004 Hour: 14:40 20.7 Lat: 33.92N Lon: 36.22E Depth: 15 Agency: REL Local
 Magnitudes: 2.6MC REL Rms: 1.7 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ47.10 328 IPG 1440 30.55 1.9 33 88 -59 40.0 1.0
 HWQ SE47.10 328 ISG 1440 36.17 1.6 1.0
 BHL SZ51.98 269 IPG 1440 27.74 -1.6 1.0
 BHL SE51.98 269 ISG 1440 33.93 -1.8 1.0

August 25 2004 Hour: 15:55 54.7 Lat: 34.22N Lon: 35.52E Depth: 15 Agency: REL Local
Magnitudes: 2.4MC REL Rms: 0.1 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ36.99 161 IPG 1556 1.34 0.2 27 151 170 26.8 1.0
 BHL SN36.99 161 ISG 1556 5.71 -0.2 1.0
 HWQ SZ39.75 80 IPG 1556 1.63 0.1 1.0
 HWQ SE39.75 80 ISG 1556 6.59 0.0 1.0

August 26 2004 Hour: 10:5 0.9 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ IPG 10 6 4.17
 BHL SE ISG 10 6 13.00
 HWQ SE ISG 10 6 14.08
 BHL SZ IPG 10 5 58.70

August 27 2004 Hour: 15:33 19.8 Lat: 34.21N Lon: 35.47E Depth: 15 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.2 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ37.77 154 IPG 1533 26.69 0.4 1.0
 BHL SN37.77 154 ISG 1533 31.16 0.0 1.0
 HWQ SZ44.34 80 IPG 1533 27.27 0.0 35 77 176 38.8 1.0
 HWQ SN44.34 80 ISG 1533 32.54 -0.3 1.0

August 28 2004 Hour: 10:50 56.2 Lat: 33.74N Lon: 35.23E Depth: 0 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.6 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 MATL SZ29.70 162 IPG 1051 1.34 0.4 1.0
 BHL SZ43.11 65 IPG 1051 1.92 -1.2 46 1.0
 BHL SE43.11 65 ISG 1051 8.24 0.0 1.0
 HWQ SZ88.85 48 IPG 1051 10.59 0.1 1.0
 HWQ SE88.85 48 ISG 1051 21.78 0.7 1.0

August 29 2004 Hour: 13:32 50.6 Lat: 35.23N Lon: 35.92E Depth: 0 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 1.8 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ105.8 179 IPG 1333 5.22 -2.5 50 351 -7 54.0 1.0
 HWQ SE105.8 179 ISG 1333 19.67 -0.7 1.0
 BHL SZ149.2 189 IPG 1333 17.12 2.4 1.0
 BHL SN149.2 189 ISG 1333 33.27 0.8 1.0

August 30 2004 Hour: 15:30 7.8 Lat: 33.18N Lon: 35.88E Depth: 15 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 1.3 secs
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL SZ82.55 346 IPG 1530 22.02 1.1 28 191 26 15.0 1.0
 BHL SN82.55 346 ISG 1530 30.49 -0.1 1.0
 HWQ SZ121.6 3 IPG 1530 27.70 1.0 1.0
 HWQ SE121.6 3 ISG 1530 38.59 -2.0 1.0

Epicentral Map of Lebanon

August 2004

Magnitudes

- Ml = 2
- Ml = 3
- Ml = 4
- Ml = 5

