



National Institute for Earth Physics - Magurele

Moment magnitude and waveform measurements - manual

Romania - Event 24220418 Zona seismica Vrancea

Event local time: Sat Apr 25,2020 01:04:18

Fri Apr 24,2020 22:04:18 GMT N45.90 E27.47 Ml: 5.0 Depth: 21km ID: 148

Measurements are performed on data extracted and processed by an operator

ML: 5.01 Mw: 4.56 netm0: 0.166E+17 netf0: 1.84 neteqR: 0.98 Nsta: 23

Station moment magnitude estimates - dbmw

sta	chamw	mw	m0	f0	eqR	timePmw	Pmw	timeSmw	Smw	seg
BISRR	HHT	5.0	0.488E+17	1.21	1.05	22:04:31	db	22:04:41	db	V
BIR	HHT	4.6	0.122E+17	1.23	1.03	22:04:26	db	22:04:32	db	V
COVR	HHT	4.2	0.334E+16	1.44	0.88	22:04:35	db	22:04:48	db	V
CFR	HHT	4.4	0.549E+16	5.00	0.25	22:04:33	db	22:04:45	db	V
GHRR	HHT	4.6	0.125E+17	1.17	1.09	22:04:23	db	22:04:28	db	V
ISR	HHT	5.3	0.114E+18	0.54	2.33	22:04:38	db	22:04:50	db	V
IZVR	HHT	4.3	0.388E+16	2.67	0.47	22:04:26	db	22:04:33	db	V
MLR	HHT	4.9	0.335E+17	0.65	1.96	22:04:40	db	22:04:55	db	V
NEHR	HHT	4.3	0.351E+16	0.84	1.51	22:04:36	db	22:04:49	db	V
ODBI	HHT	4.6	0.131E+17	1.79	0.71	22:04:26	db	22:04:32	db	V
PLOR	HHT	4.6	0.110E+17	2.22	0.57	22:04:29	db	22:04:38	db	V
SCHL	HHT	3.9	0.106E+16	2.67	0.47	22:04:27	db	22:04:35	db	V
SCTR	HHT	4.6	0.123E+17	1.39	0.91	22:04:27	db	22:04:34	db	V
TATR	HHT	4.6	0.116E+17	2.30	0.55	22:04:28	db	22:04:36	db	V
TESR	HHT	4.6	0.126E+17	1.27	1.00	22:04:33	db	22:04:45	db	V
TUDR	HHT	4.5	0.707E+16	2.27	0.56	22:04:25	db	22:04:31	db	V
VASR	HHT	4.7	0.152E+17	1.99	0.64	22:04:33	db	22:04:44	db	V
VLDR	HHT	4.4	0.501E+16	3.13	0.40	22:04:27	db	22:04:34	db	V
VRI	HHT	4.5	0.705E+16	2.34	0.54	22:04:28	db	22:04:36	db	V
NEGRR	HHT	4.2	0.244E+16	3.20	0.40	22:04:27	db	22:04:34	db	V
TURR	HHT	4.8	0.206E+17	0.52	2.45	22:04:37	db	22:04:51	db	V
COSR	HHT	4.6	0.997E+16	1.81	0.70	22:04:22	db	22:04:26	db	V
ONER	HHT	4.7	0.172E+17	0.59	2.13	22:04:34	db	22:04:47	db	V

Waveform measurements

sta	chan	d(km)	m1	pga	pgv	psa03	psa10	psa30	Arias	Housner
BISRR	HHZ	70	5.6	2.78	0.17	7.27	1.59	0.12	0.0155	0.6905
BISRR	HHN	70	5.6	3.00	0.33	9.05	4.18	0.26	0.0381	1.3046
BISRR	HHE	70	5.6	5.00	0.32	13.15	4.55	0.20	0.0585	1.5483
BIR	HHZ	40	4.9	4.73	0.16	6.33	0.83	0.07	0.0396	0.5323

BIR	HHN	40	4.9	6.07	0.23	15.82	2.31	0.21	0.0549	0.9626
BIR	HHE	40	4.9	4.76	0.17	7.02	1.77	0.11	0.0504	0.7533
COVR	HHZ	98	4.5	0.31	0.02	0.70	0.10	0.01	0.0002	0.0557
COVR	HHN	98	4.5	0.35	0.02	1.12	0.18	0.01	0.0002	0.0842
COVR	HHE	98	4.5	0.26	0.02	0.77	0.14	0.01	0.0002	0.0789
CFR	HHZ	95	4.9	5.40	0.10	3.71	0.20	0.03	0.0521	0.2777
CFR	HHN	95	4.9	14.28	0.33	6.03	0.49		0.2822	0.8834
CFR	HHE	95	4.9	11.00	0.20	7.25	0.36	0.05	0.1634	0.5821
GHRR	HHZ	19	4.9	6.46	0.24	8.81	3.05	0.13	0.0526	1.0191
GHRR	HHN	19	4.9	18.09	1.02	22.48	11.57	0.76	0.1801	3.5761
GHRR	HHE	19	4.9	13.48	0.45	14.36	4.29	0.43	0.1450	1.8572
ISR	HHZ	112	5.0	0.59	0.03	2.10	0.54	0.08	0.0009	0.1776
ISR	HHN	112	5.0	1.03	0.06	3.37	1.11	0.15	0.0030	0.3690
ISR	HHE	112	5.0	0.96	0.06	2.12	0.82	0.18	0.0023	0.3152
IZVR	HHZ	45	4.8	5.45	0.09	3.01	0.22	0.03	0.0484	0.2862
IZVR	HHN	45	4.8	10.38	0.24	7.45	0.55	0.06	0.1325	0.6970
IZVR	HHE	45	4.8	12.46	0.30	7.50	0.84	0.11	0.1500	0.8965
MLR	HHZ	126	4.9	0.28	0.02	0.74	0.19	0.02	0.0001	0.0877
MLR	HHN	126	4.9	0.29	0.02	0.92	0.33	0.02	0.0001	0.1104
MLR	HHE	126	4.9	0.34	0.04	0.56	0.30	0.05	0.0002	0.1485
NEHR	HHZ	104	3.9	0.04	0.00	0.12	0.04	0.00	0.0000	0.0106
NEHR	HHN	104	3.9	0.07	0.01	0.21	0.06	0.01	0.0000	0.0209
NEHR	HHE	104	3.9	0.06	0.00	0.20	0.04	0.01	0.0000	0.0176
ODBI	HHZ	35	5.6	10.51	0.52	43.50	2.32	0.23	0.1611	1.8980
ODBI	HHN	35	5.6	28.25	1.50	38.09	10.24	0.85	0.3288	4.6230
ODBI	HHE	35	5.6	20.40	1.06	39.11	4.53	0.45	0.2709	3.4895
PLOR	HHZ	63	5.4	1.96	0.09	4.53	0.41	0.04	0.0042	0.3332
PLOR	HHN	63	5.4	6.20	0.34	23.00	1.16	0.12	0.0321	1.1912
PLOR	HHE	63	5.4	3.62	0.19	16.56	0.85	0.08	0.0194	0.7135
SCHL	HHZ	52	4.6	2.40	0.05	1.35	0.06	0.01	0.0071	0.1332
SCHL	HHN	52	4.6	1.85	0.07	2.57	0.22	0.02	0.0031	0.2000
SCHL	HHE	52	4.6	2.61	0.11	3.41	0.22	0.04	0.0050	0.3194
SCTR	HHZ	48	5.1	4.47	0.13	5.68	0.77	0.07	0.0339	0.4581
SCTR	HHN	48	5.1	6.35	0.29	13.65	2.12	0.17	0.0627	1.0045
SCTR	HHE	48	5.1	5.41	0.19	7.91	1.12	0.11	0.0545	0.6931
TATR	HHZ	56	5.5	13.11	0.21	7.92	0.87	0.06	0.2166	0.6959
TATR	HHN	56	5.5	4.95	0.19	8.36	0.90	0.08	0.0396	0.6365
TATR	HHE	56	5.5	21.19	0.54	20.91	2.44		0.2762	1.7585
TESR	HHZ	93	5.0	0.57	0.02	0.73	0.35	0.01	0.0008	0.0998
TESR	HHN	93	5.0	0.63	0.04	1.92	0.46	0.06	0.0011	0.1674
TESR	HHE	93	5.0	0.93	0.07	2.73	0.73	0.04	0.0016	0.2691
TUDR	HHZ	37	5.1	27.49	0.41	8.62	0.75	0.11	1.3272	1.1920
TUDR	HHN	37	5.1	27.30	0.61	25.39	1.07	0.20	0.3491	1.8703
TUDR	HHE	37	5.1	23.81	0.55	26.81	1.89	0.20	0.2736	1.8457
VASR	HHZ	86	5.3	5.27	0.08	6.37	0.45	0.03	0.0439	0.2753
VASR	HHN	86	5.3	5.71	0.21	16.05	0.86	0.08	0.0336	0.6677
VASR	HHE	86	5.3	3.67	0.13	5.35	0.85	0.05	0.0272	0.4949
VLDR	HHZ	48	5.0	11.84	0.21	10.20	0.48	0.07	0.2932	0.6214
VLDR	HHN	48	5.0	17.11	0.38	12.27	0.90	0.11	0.2918	1.1985
VLDR	HHE	48	5.0	15.04	0.38	12.81	1.05	0.12	0.2839	1.1311
VRI	HHZ	57	5.4	2.94	0.12	9.04	0.47	0.04	0.0044	0.3697
VRI	HHN	57	5.4	5.61	0.30	22.15	1.16	0.12	0.0190	0.9811
VRI	HHE	57	5.4	5.56	0.30	24.80	1.01	0.10	0.0408	1.0109
NEGRR	HHZ	51	4.8	5.24	0.12	5.70	0.20	0.03	0.0446	0.3385
NEGRR	HHN	51	4.8	7.87	0.17	7.10	0.43	0.06	0.0875	0.5510
NEGRR	HHE	51	4.8	7.85	0.21	7.52	0.57	0.07	0.0964	0.5774
SCHLR	HHZ	55	5.1	10.62	0.19	4.23	0.26	0.04	0.0806	0.5133
SCHLR	HHE	55	5.1	16.60	0.34	10.08	1.06	0.11	0.1246	0.9969
TURR	HHZ	113	4.5	0.10	0.01	0.27	0.09	0.02	0.0000	0.0338
TURR	HHN	113	4.5	0.28	0.02	1.05	0.12	0.02	0.0001	0.0598
TURR	HHE	113	4.5	0.16	0.01	0.84	0.18	0.03	0.0001	0.0560
COSR	HHZ	12	5.1	50.86	1.18	36.63	2.96	0.36	1.0003	3.2360
COSR	HHN	12	5.1	74.48	3.33	111.99	12.04	1.06	1.8028	9.4205
COSR	HHE	12	5.1	81.17	3.11	112.58	8.88		2.2764	9.5766
ONER	HHZ	96	4.4	0.20	0.02	0.51	0.19	0.02	0.0001	0.0611

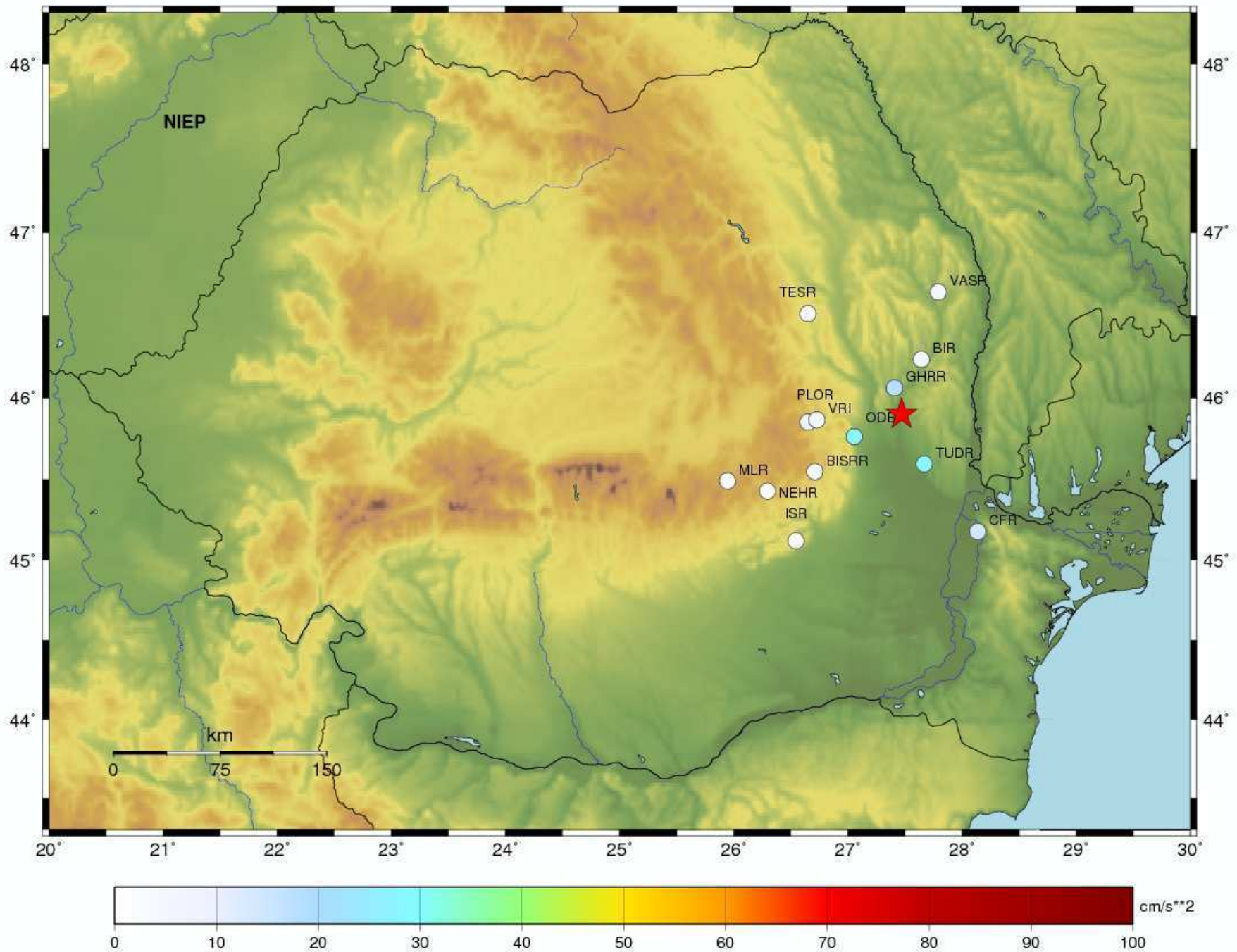
ONER	HHN	96	4.4	0.25	0.02	0.63	0.28	0.04	0.0001	0.0843
ONER	HHE	96	4.4	0.23	0.02	0.64	0.19	0.02	0.0001	0.0815

Units: pgv: cm/sec, pga,psa03,psa10,psa30: cm/sec^2 Arias: cm/sec Housner: cm

Antelope dbmw – observed stations accelerations (cm/sec**2)

Maximum acceleration: COSR 81.1672

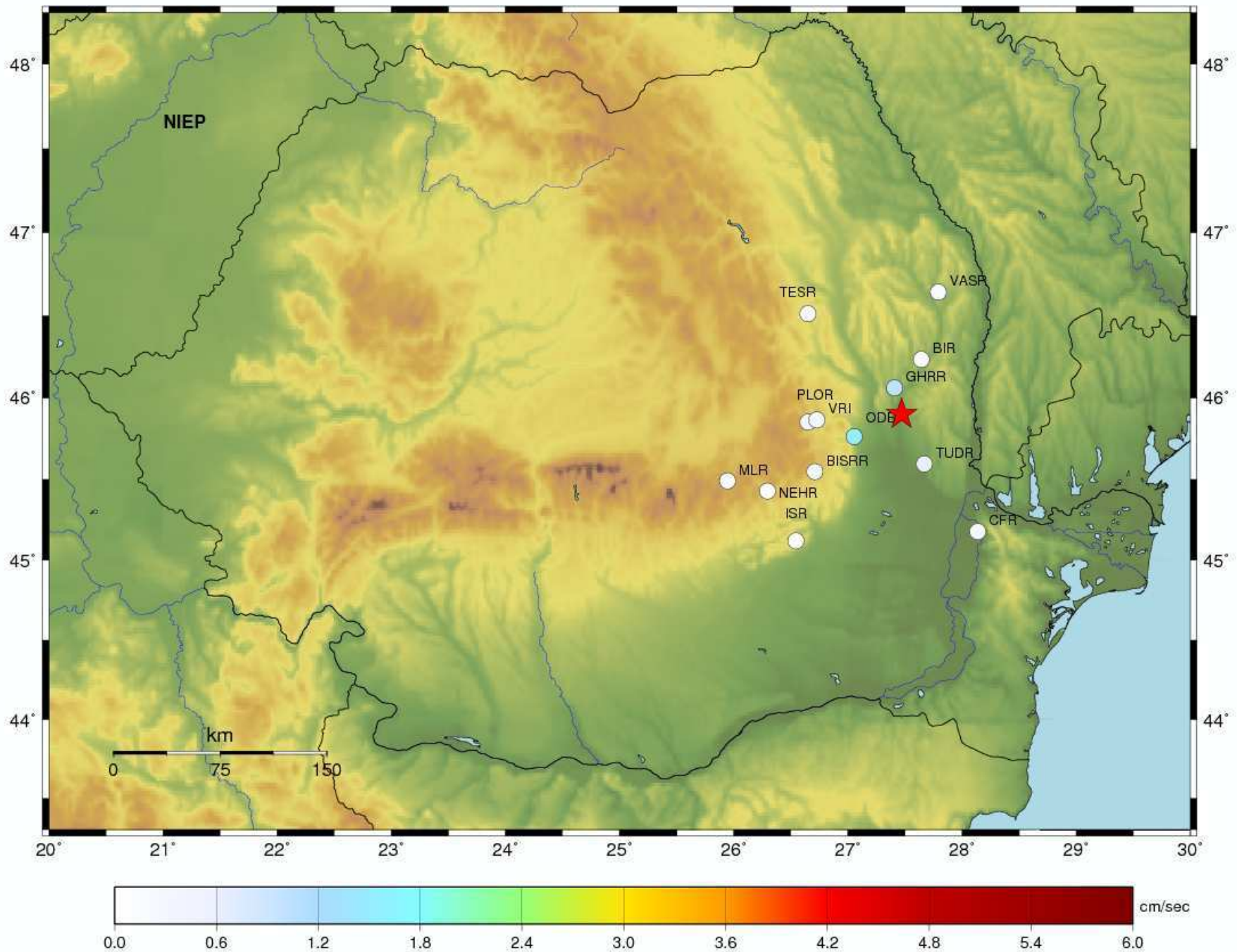
Fri Apr 24,2020 22:04:18 GMT M: 5.01 Mw: 4.56 N45.90 E27.47 Depth: 21 km ID: 148



Antelope dbmw – observed stations velocities (cm/sec)

Maximum velocity: COSR 3.3269

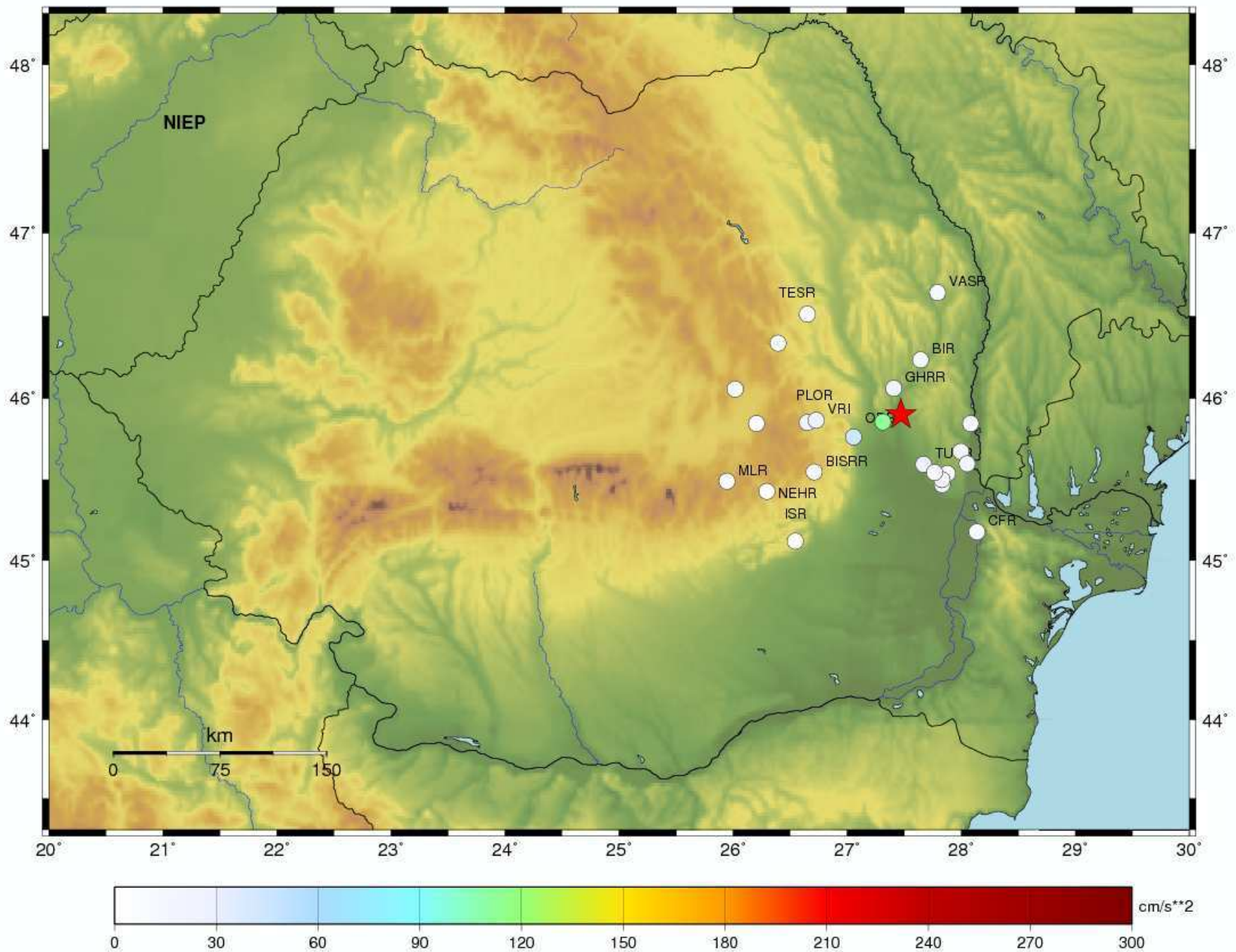
Fri Apr 24,2020 22:04:18 GMT M: 5.01 Mw: 4.56 N45.90 E27.47 Depth: 21 km ID: 148



Antelope dbmw – observed stations PSA03 (cm/sec**2)

Maximum PSA03: COSR 112.5757

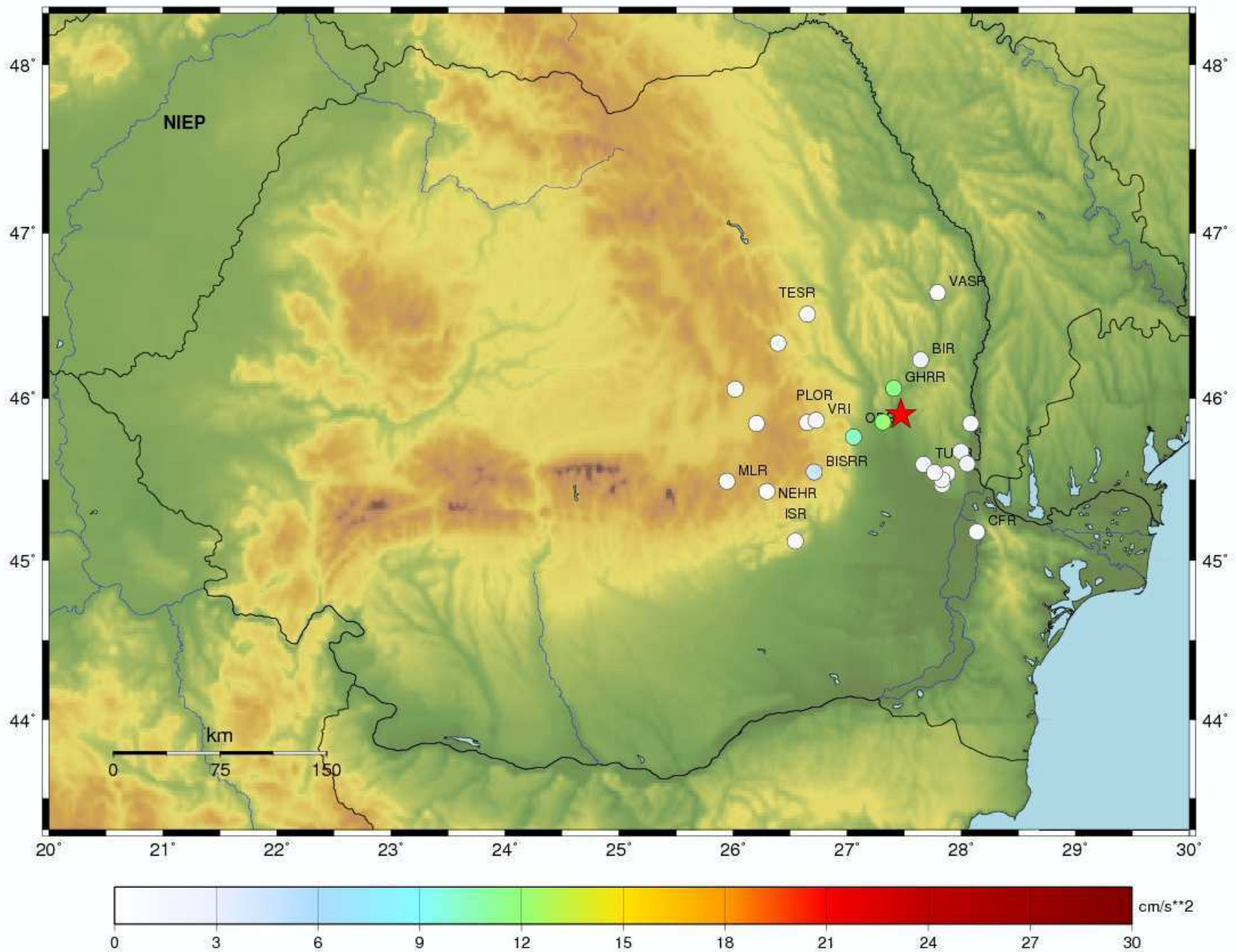
Fri Apr 24,2020 22:04:18 GMT M: 5.01 Mw: 4.56 N45.90 E27.47 Depth: 21 km ID: 148



Antelope dbmw – observed stations PSA10 (cm/sec**2)

Maximum PSA10: COSR 12.0449

Fri Apr 24,2020 22:04:18 GMT M: 5.01 Mw: 4.56 N45.90 E27.47 Depth: 21 km ID: 148



Antelope dbmw – observed stations PSA30 (cm/sec**2)

Maximum PSA30: COSR 1.0634

Fri Apr 24,2020 22:04:18 GMT M: 5.01 Mw: 4.56 N45.90 E27.47 Depth: 21 km ID: 148

