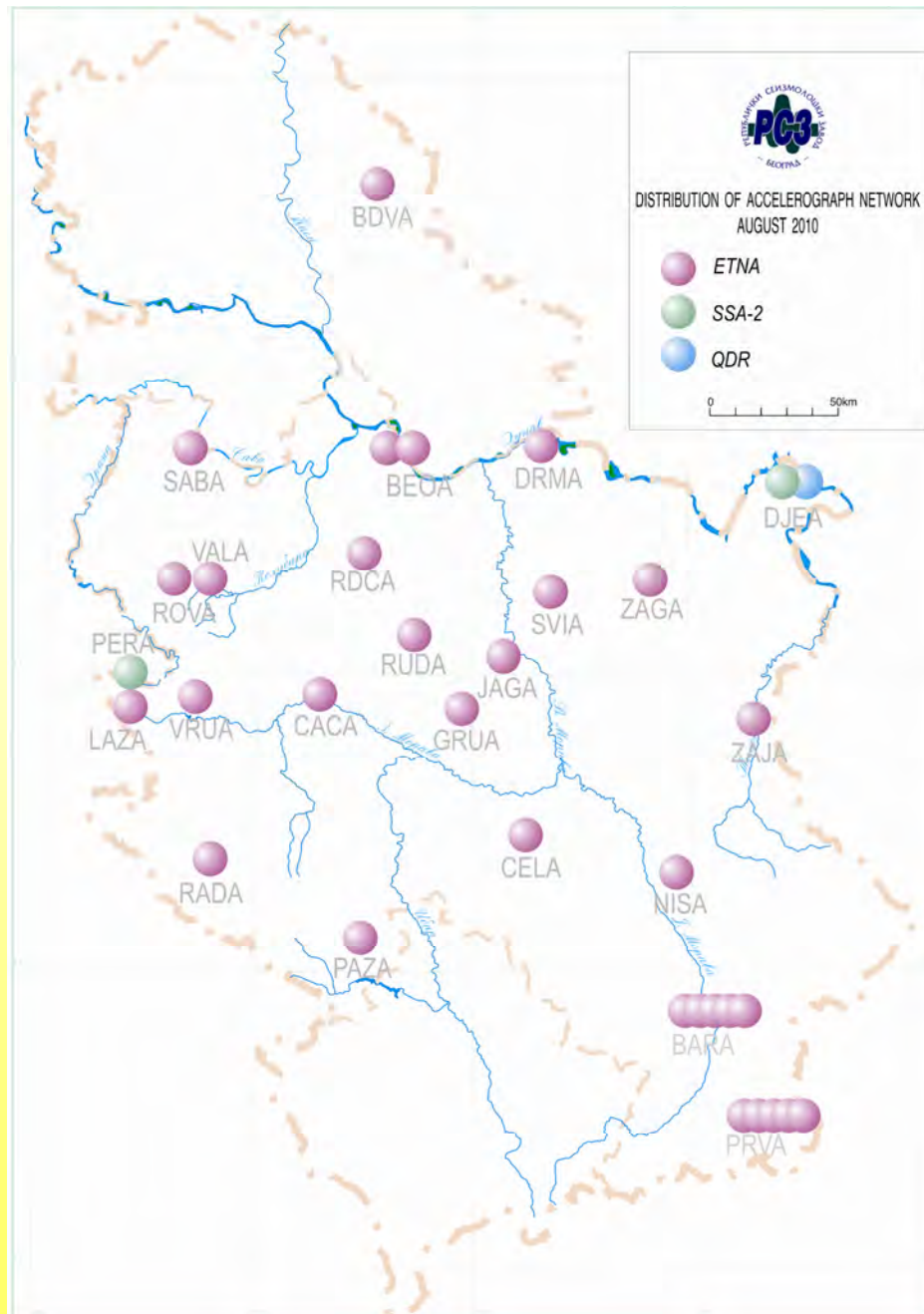




www.seismo.gov.rs

Seismological Survey of Serbia



**Distribution of
accelerograph
network
October 2010**

	Location -Code	ϕ	λ	h	Accelerograph
1	Beograd - RSZ	44.8093	20.4715	128	ETNA
2	Beograd - BEOA	44.8093	20.4715	128	ETNA
3	Celije - CELA	43.4188	21.1963	284	ETNA
4	Vrutci - VRUA	43.8494	19.7101	660	ETNA
5	Cacak - CACA	43.9060	20.3567	243	ETNA
6	Nis – NISA	43.4040	21.9470	821	ETNA
7	Sabac – SABA	44.7581	19.6919	80	ETNA
8	Zagubica - ZAGA	44.24092	21.80687	368	ETNA
9	Jagodina – JAGA	43.97100	21.2600	121	ETNA
10	Lazici – LAZA	43.9646	19.4105	871	ETNA
11	Ban. Dvor - BDVA	45.5377	20.4744	73	ETNA
12	Zajecar - ZAJA	43.8126	22.2330	205	ETNA
13	Radonja - RADA	43.5205	19.7424	815	ETNA
14	Valjevo - VALA	44.2726	19.8831	188	ETNA
15	N. Pazar – PAZA	43.1573	20.5456	500	ETNA
16	Svilajnac - SVIA	44.2655	21.2152	123	ETNA
17	Gruza - GRUA	43.8886	20.7153	279	ETNA

1	Perucac - PERA	43.8659	19.4050	273	SSA2
2-1	Djerdap – DJE array	44.6711	22.5298	52	SSA2
2-2	Djerdap – DJE array	44.6711	22.5298	~12	QDR
3	Drmno - DRMA	44.7439	21.1883	71	ETNA
4	Rudnik – RUDA	44.1050	20.4833	437	ETNA
5-1	Barje – BAR array	42.8178	21.8163	~370	ETNA
5-2	Barje – BAR array	42.8165	21.8176	~370	ETNA
5-3	Barje – BAR array	42.8156	21.8191	~370	ETNA
5-4	Barje – BAR array	42.8171	21.8161	~370	ETNA
5-5	Barje – BAR array	42.8165	21.8153	~370	ETNA
6-1	Prvonek – PRV array	42.5086	22.0754	~590	ETNA
6-2	Prvonek – PRV array	42.5086	22.0758	~590	ETNA
6-3	Prvonek – PRV array	42.5090	22.0764	~590	ETNA
6-4	Prvonek – PRV array	42.5085	22.0763	~590	ETNA
6-5	Prvonek – PRV array	42.5079	22.0758	~590	ETNA
7	Rovni - ROVA	44.24	19.75	374	ETNA

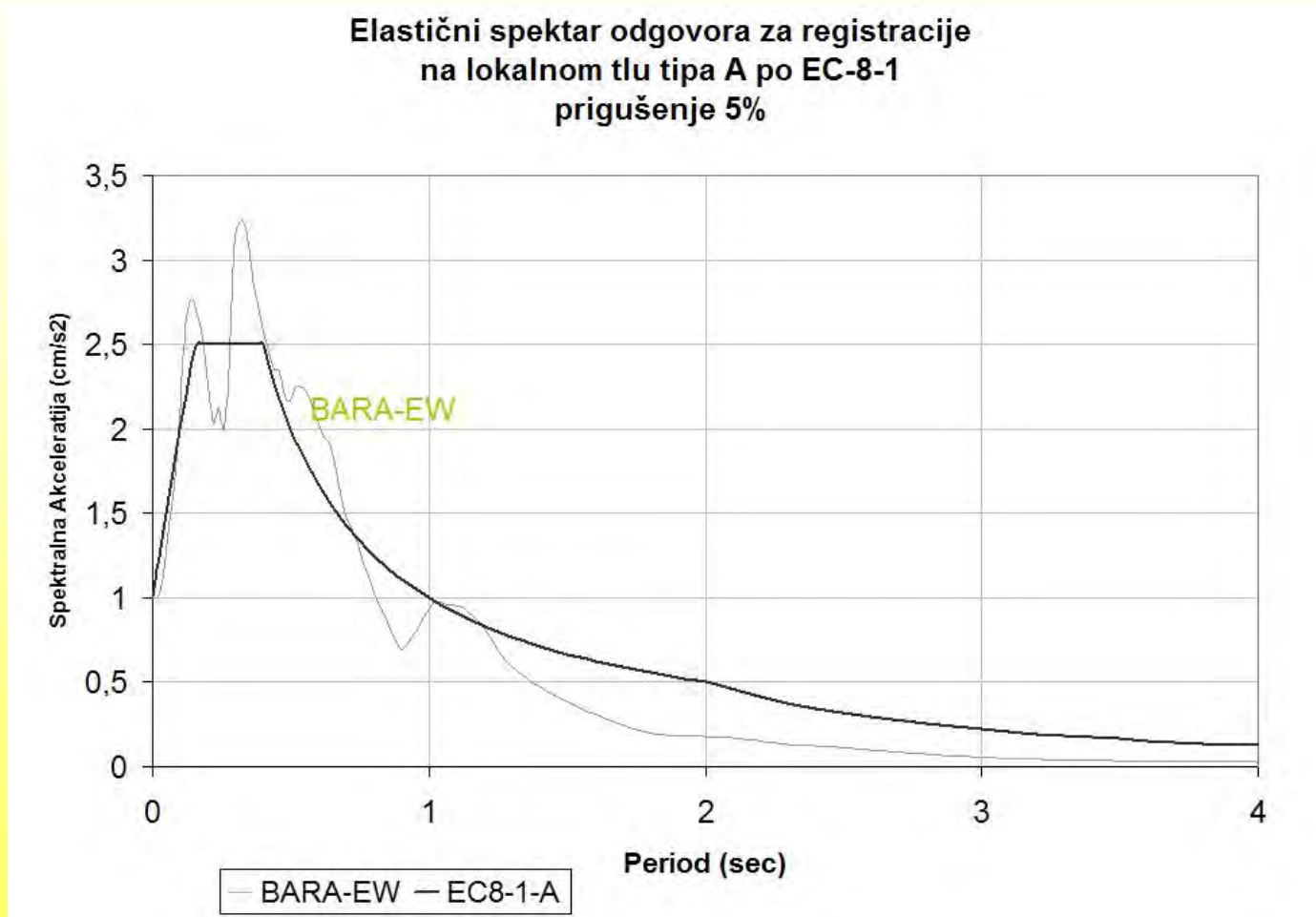
Accelerometric network

- Accelerometric network is mainly consisted of digital accelerometers ETNA with 19 bit resolution and 120dB dynamic range and sampling rate of 200 samples. In order to cover the territory of Serbia properly, it is scheduled deployment of accelerometers at 42 locations. At present accelerometers are installed at 30 locations.
- On 5 stations (LAZA, GRUA, BARA, BEO1 and CACA) data are available on demand via internet connection.

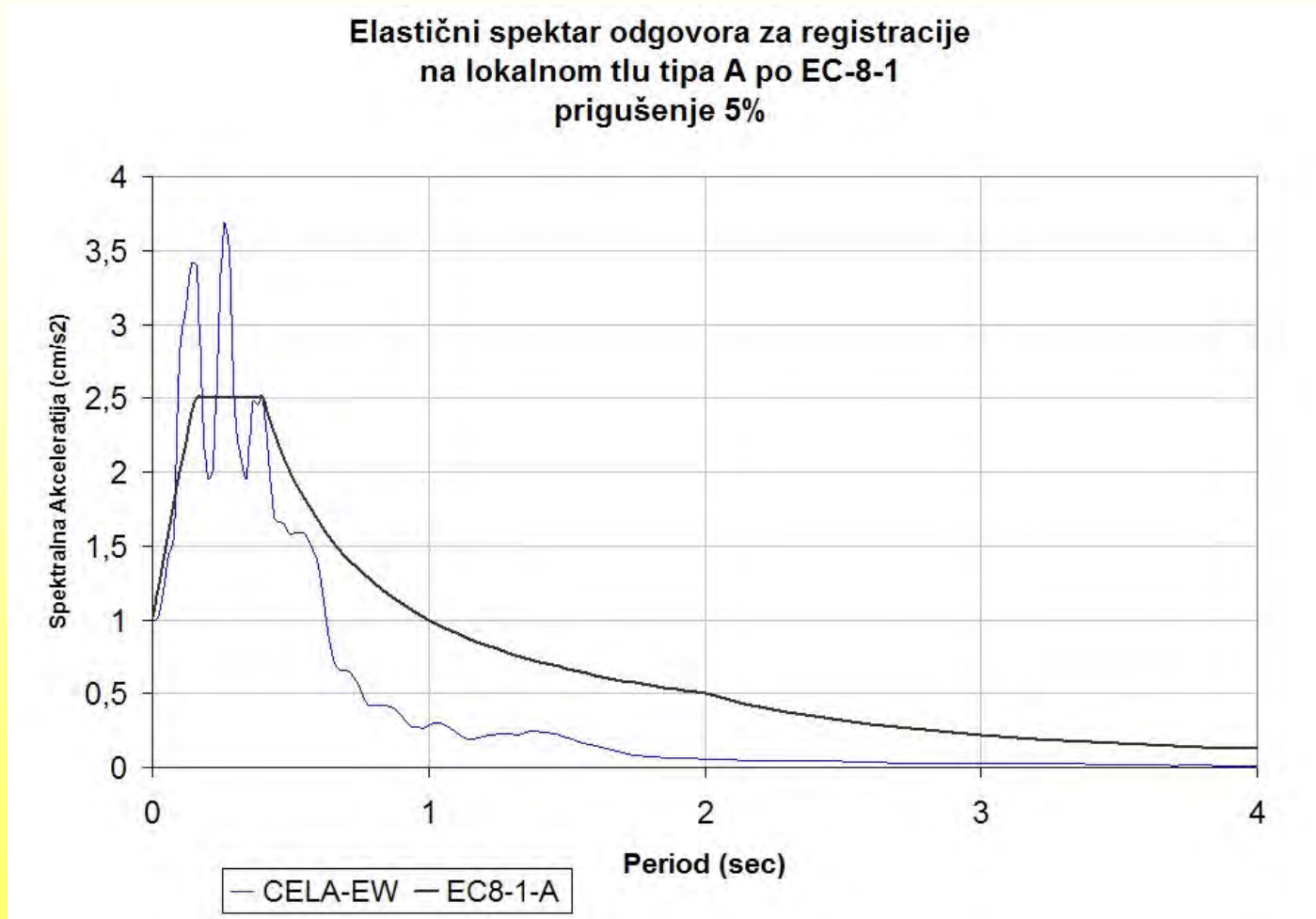
RECORDED ACCELERATIONS

Earthquake		magnitude	Number of stations with record
• Čačak 2008	15.02	4.5	3
• Čačak 2008	21.02	3.4	3
• Peć 2010	10.03	4.7	8
• Goražde 2010	18.03	3.4	3
• Goražde 2010	18.03	2.5	2
• Goražde 2010	18.03	3.0	2
• Rogatica 2010	24.03	3.5	2
• Gruža 2010	31.03	2.3	1
• Rogatica 2010	13.04	3.5	2

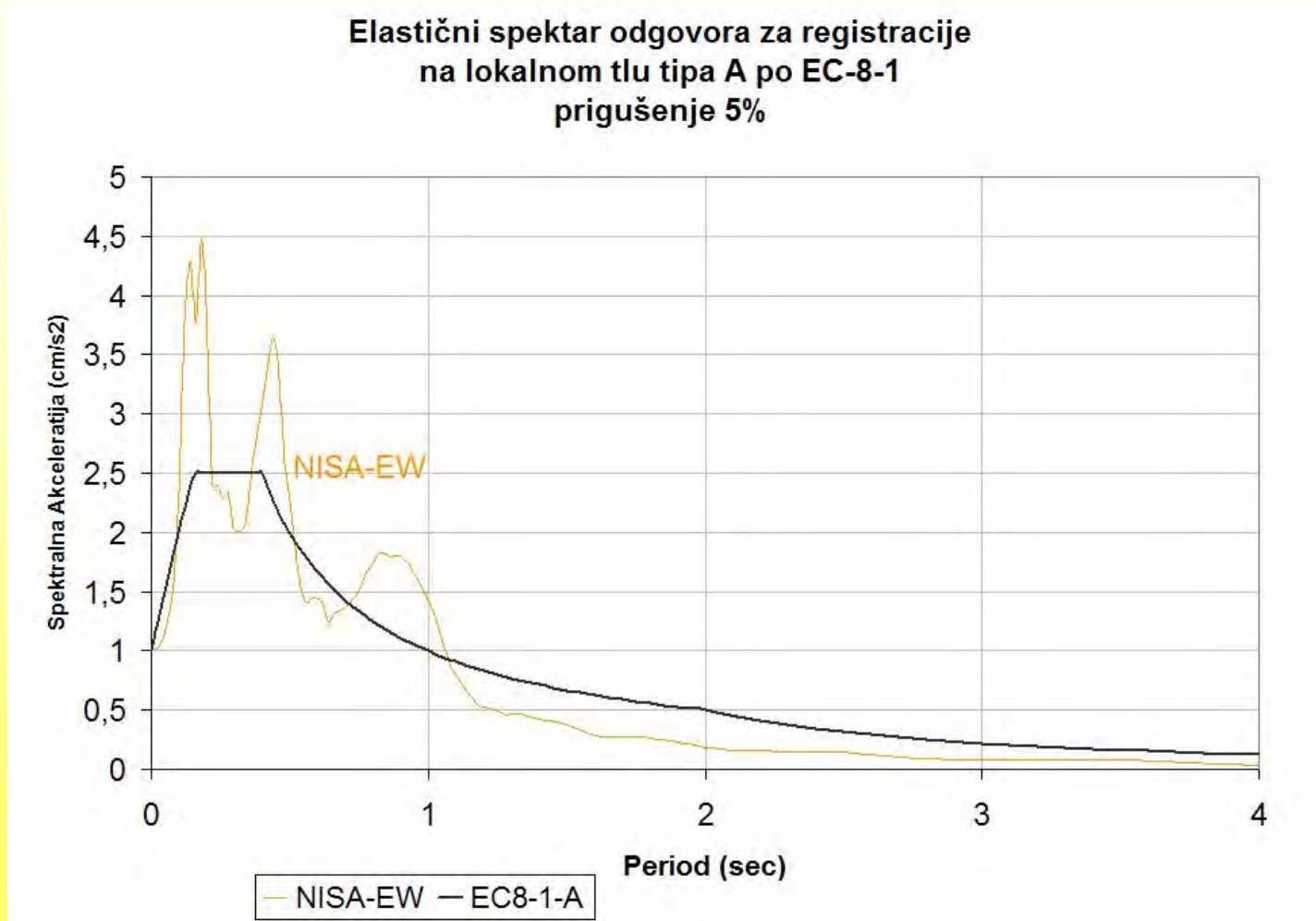
Elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



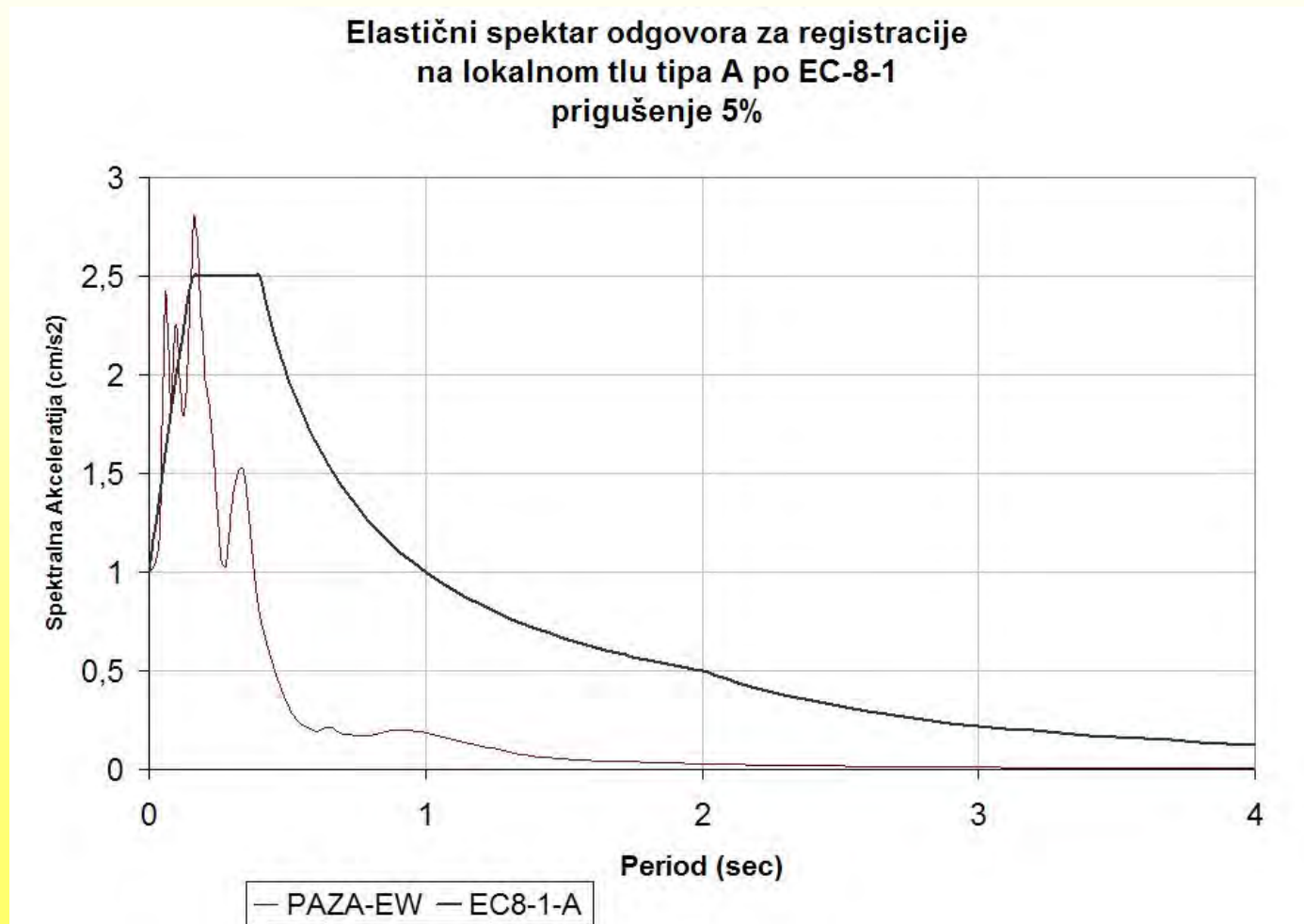
Elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



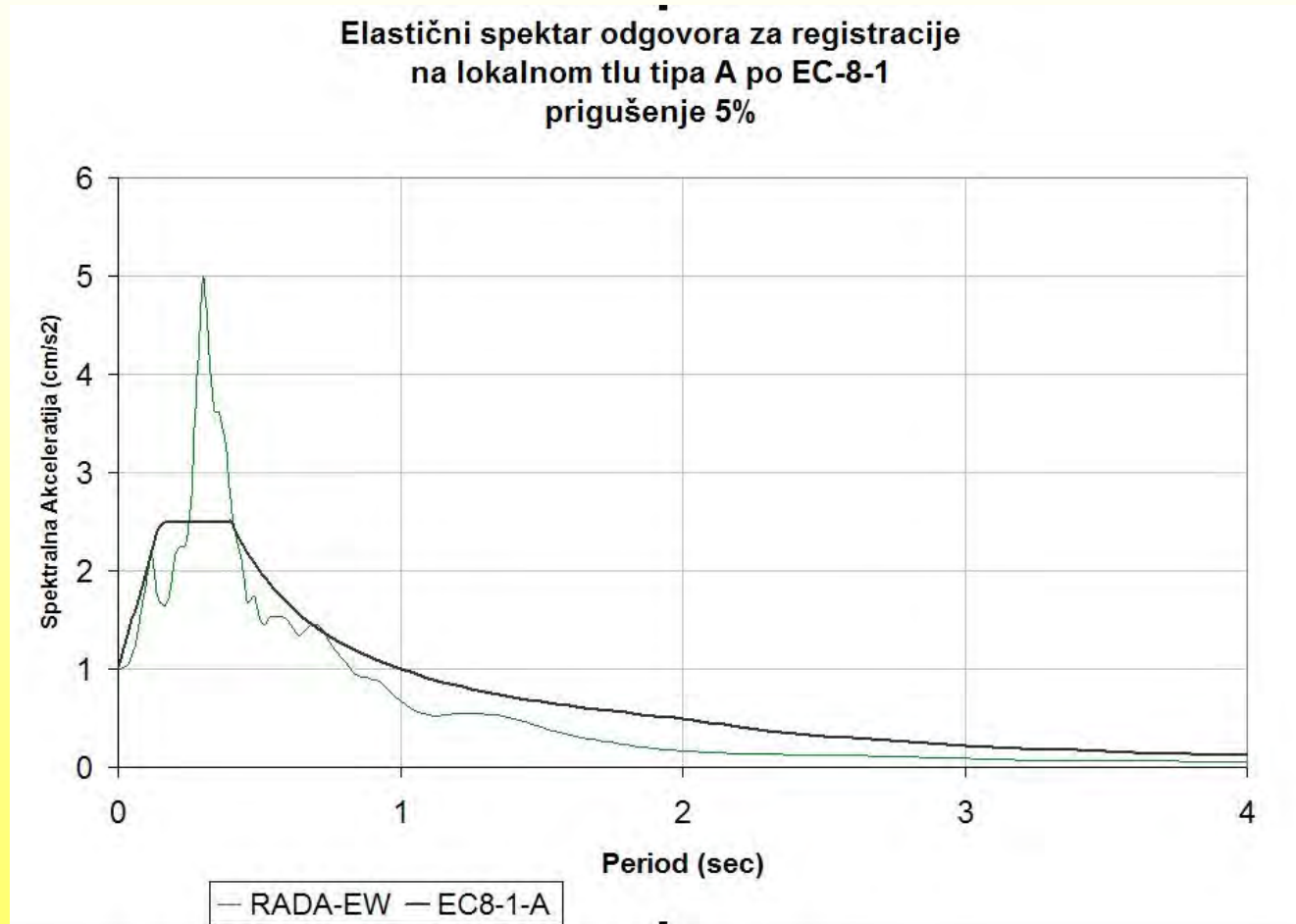
Elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



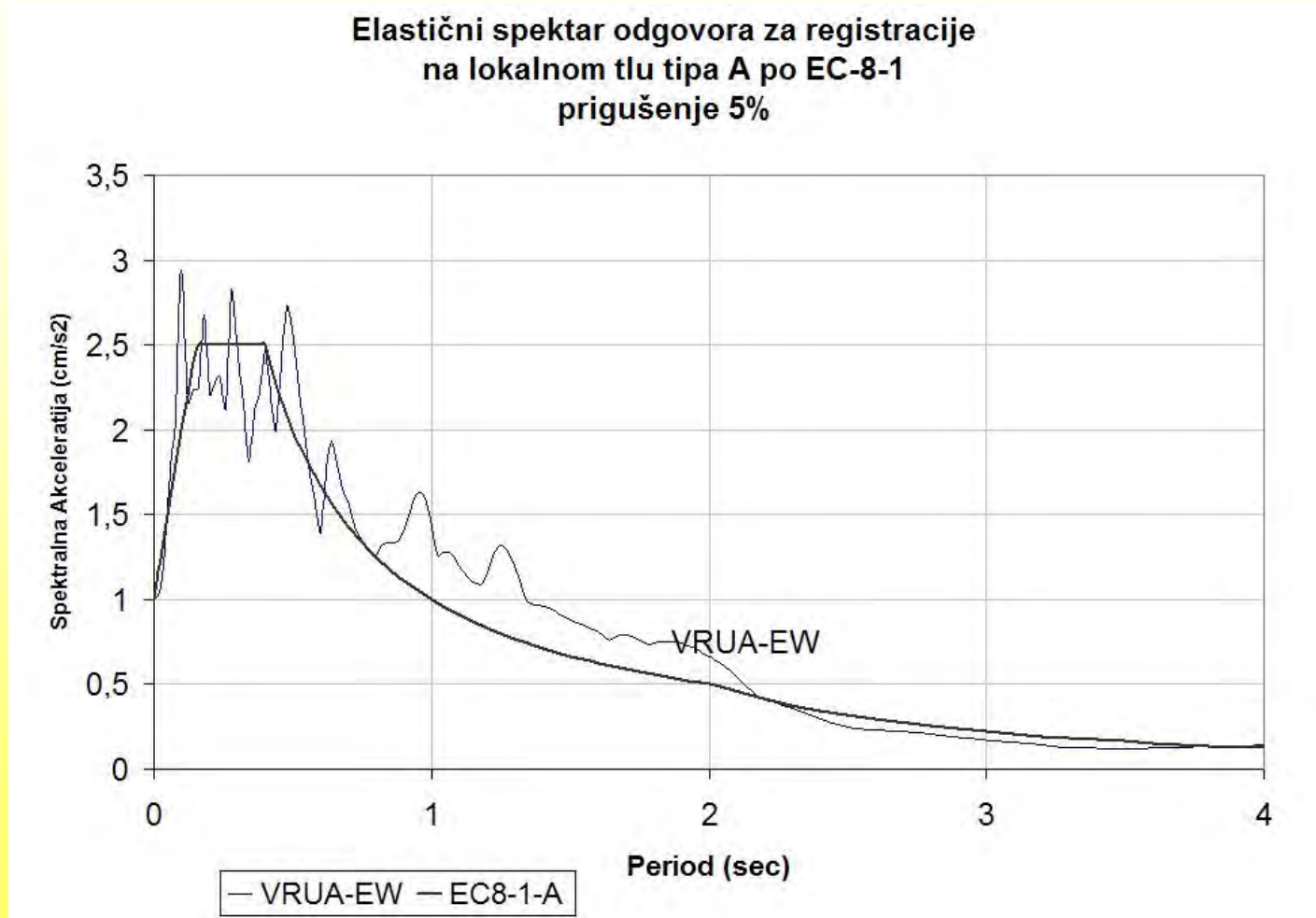
Elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



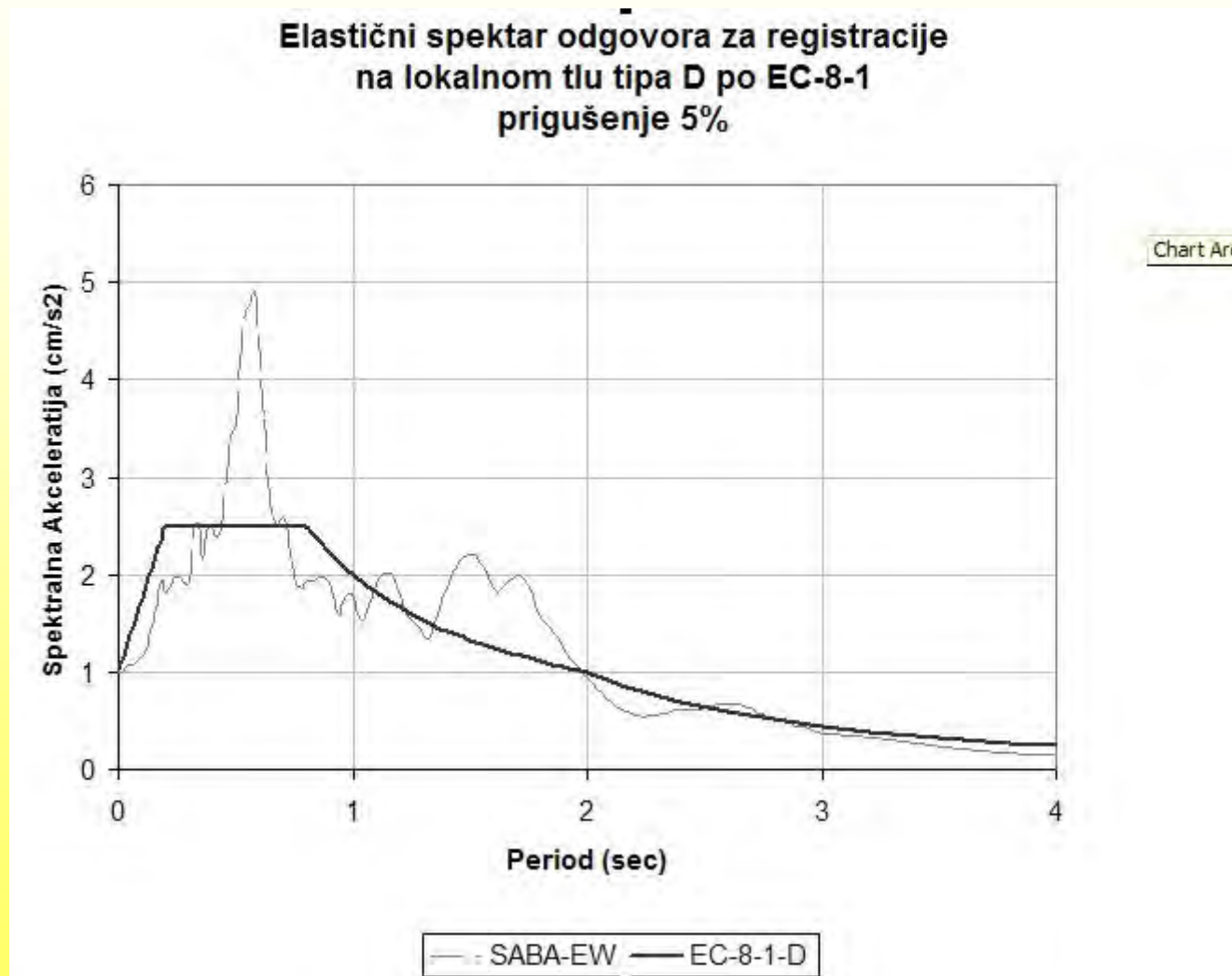
Elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



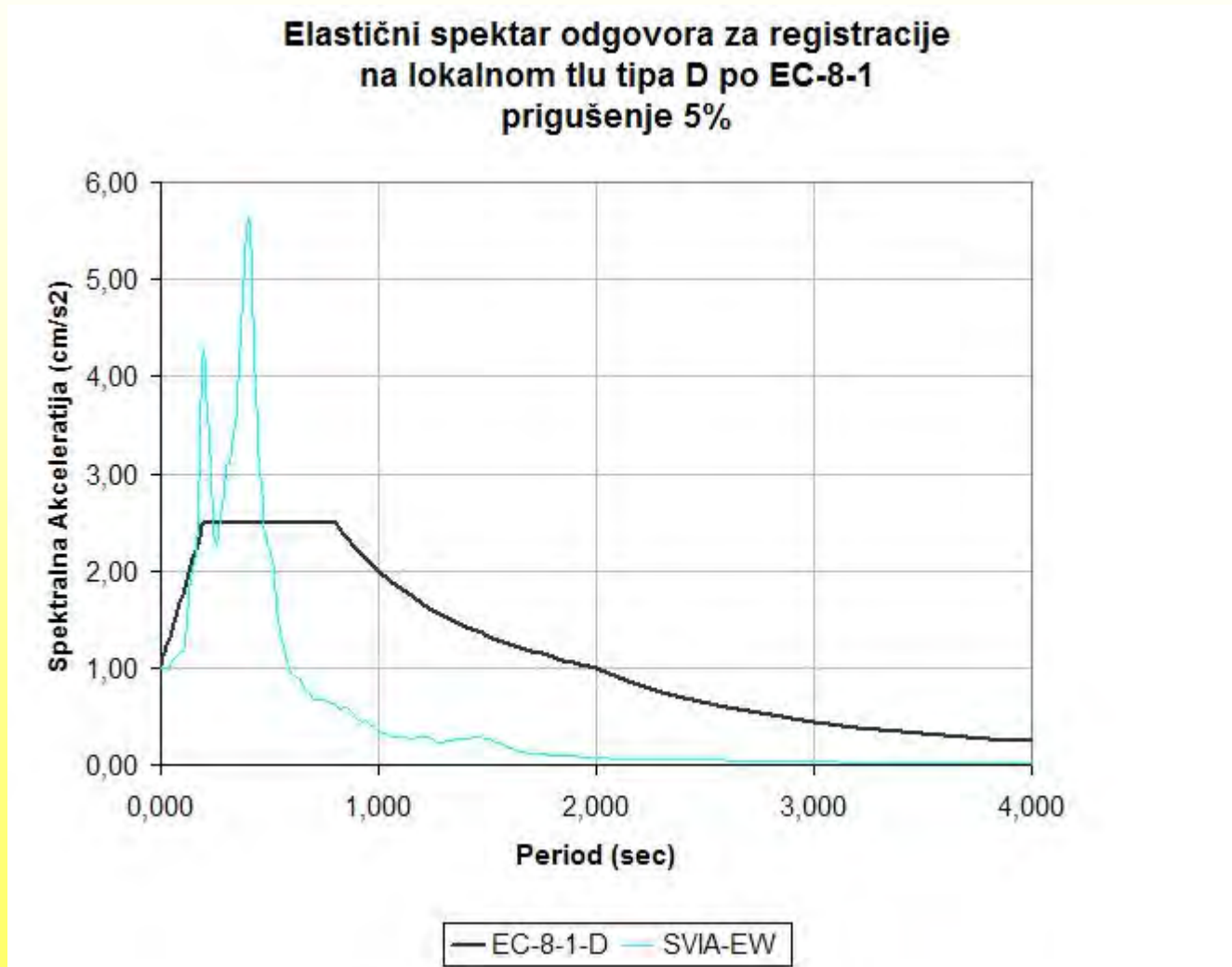
Elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



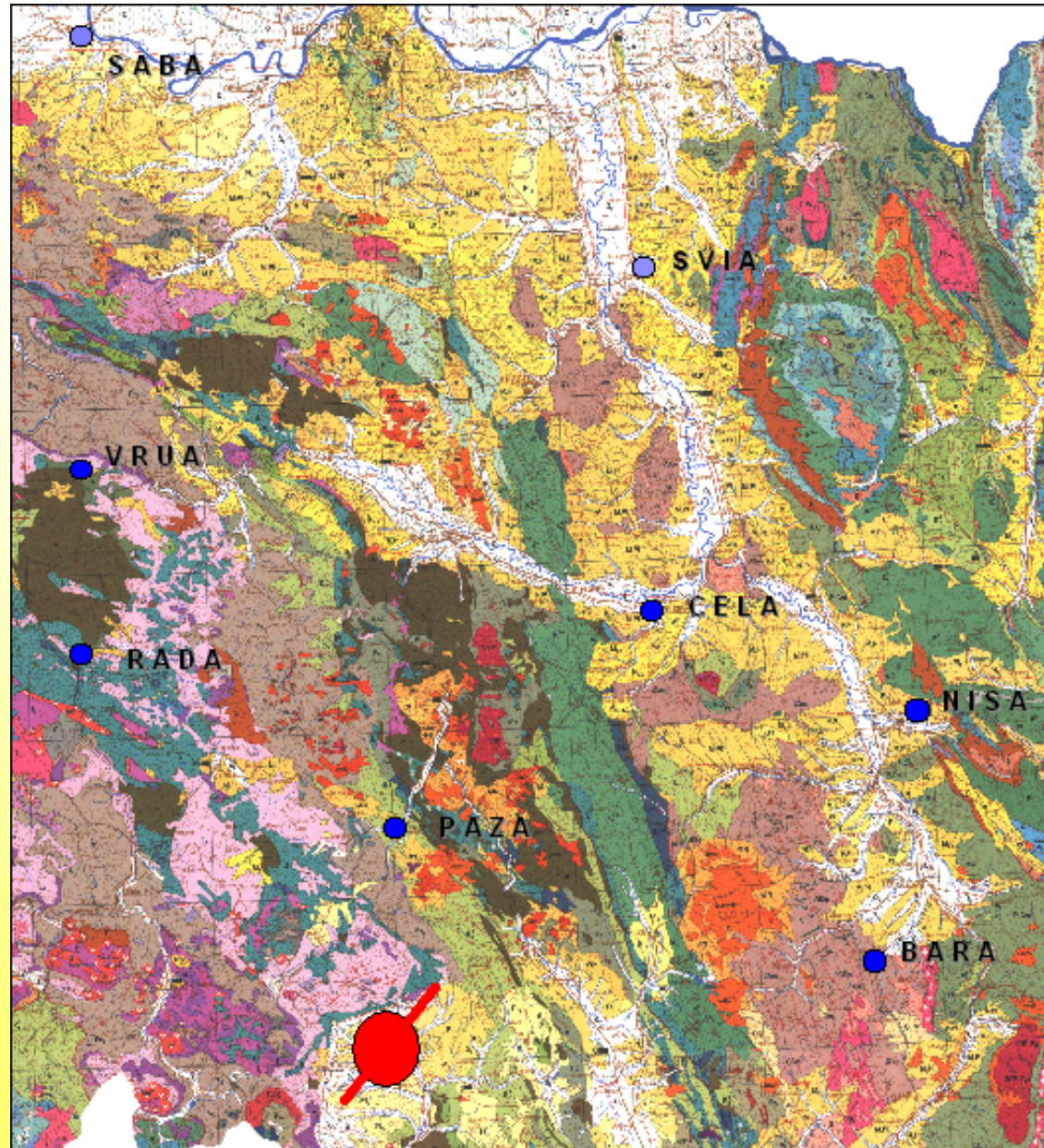
Elastic response spectrum for time history of acceleration at the local soil type D after EC 8-1 damping 5%



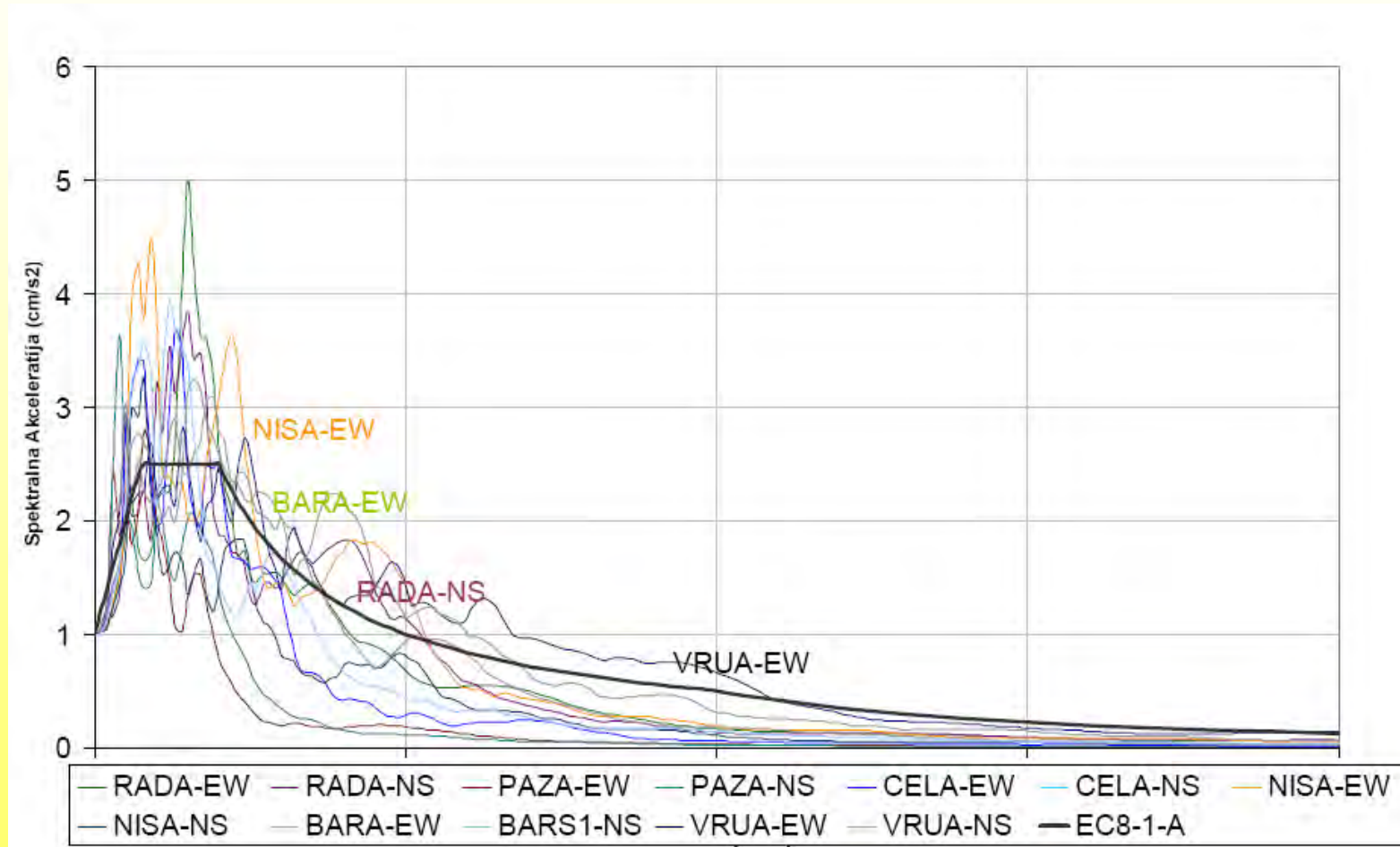
Elastic response spectrum for time history of acceleration at the local soil type D after EC 8-1 damping 5%



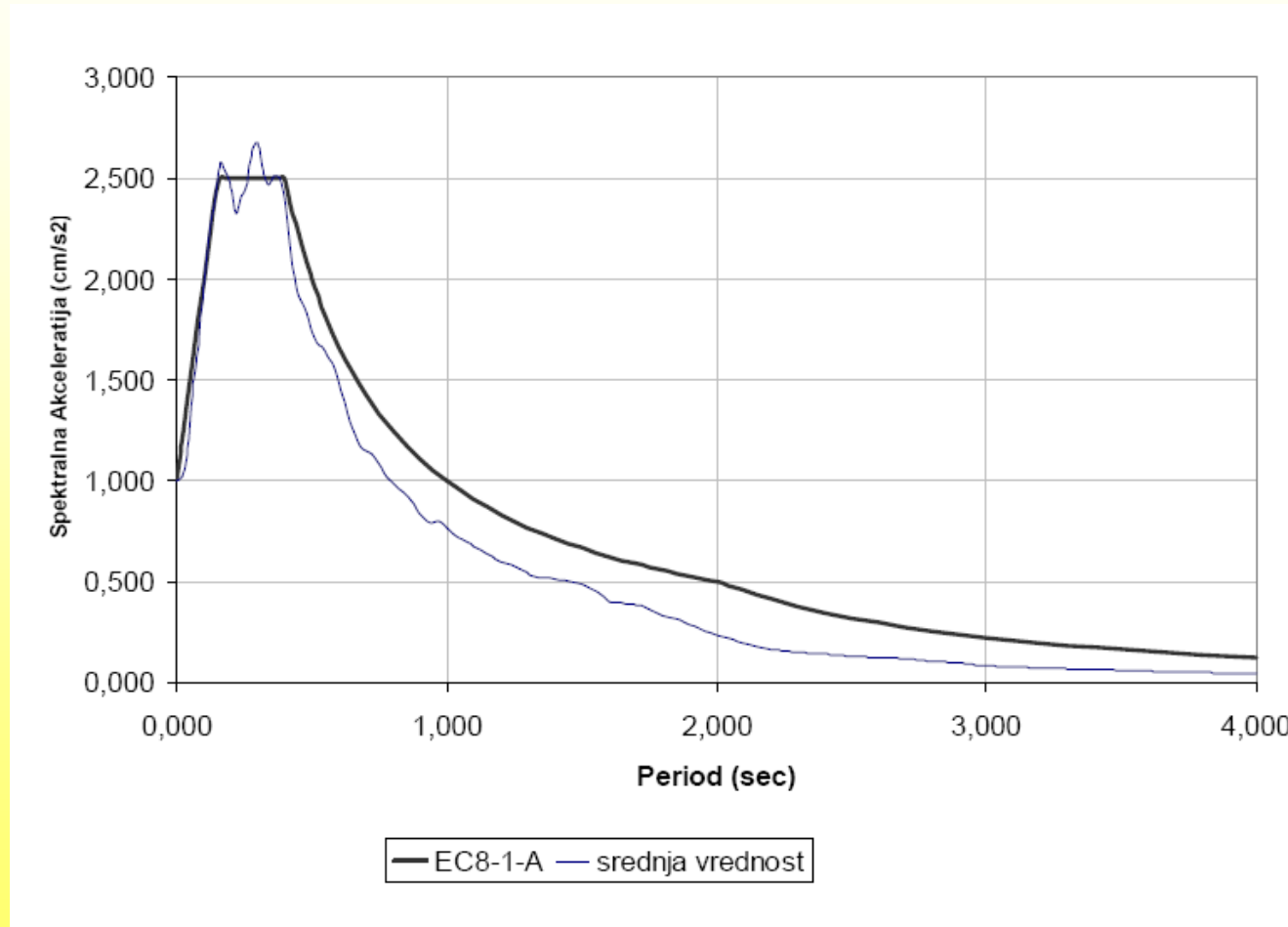
Spatial distribution of recording stations



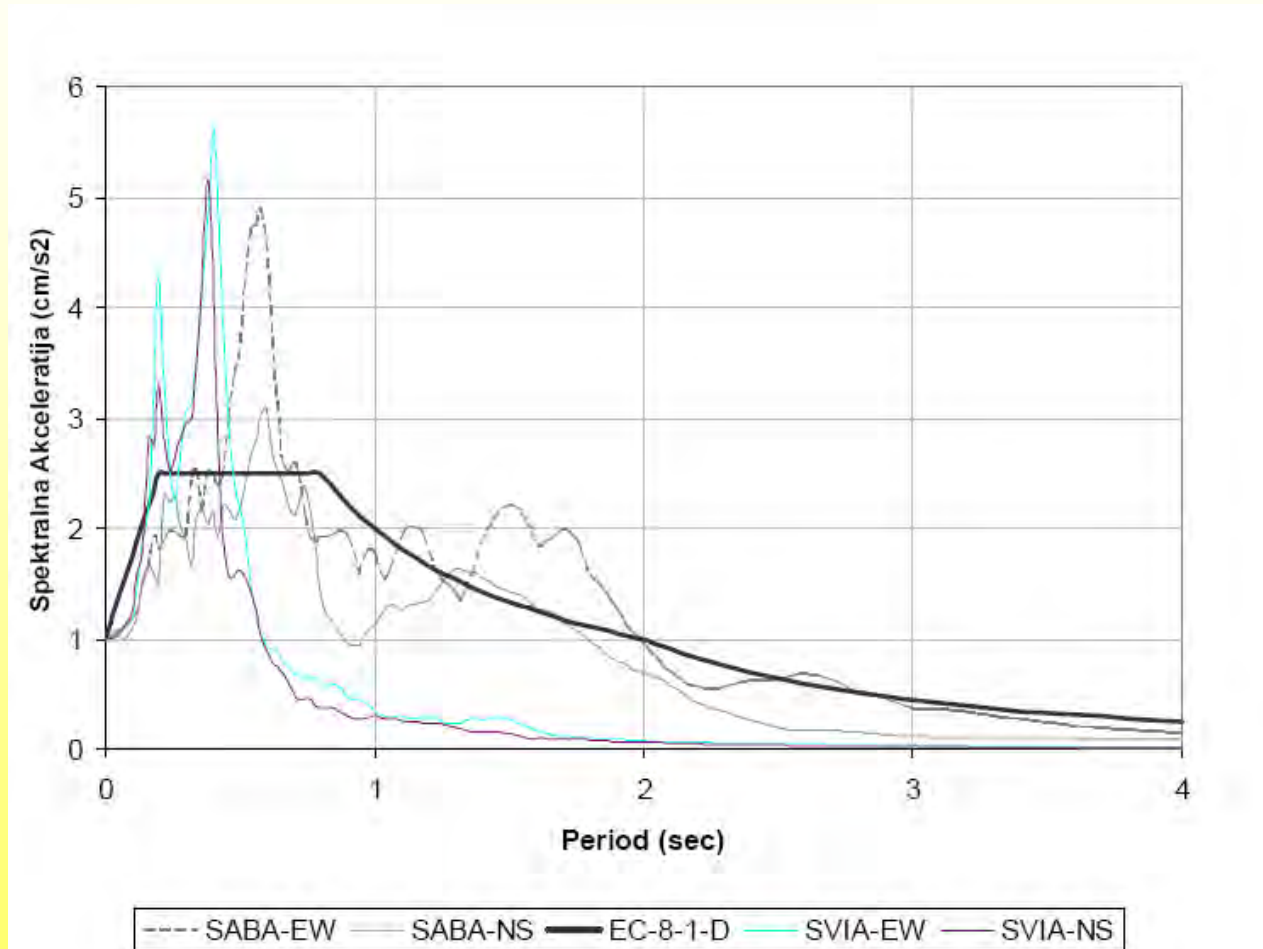
Elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



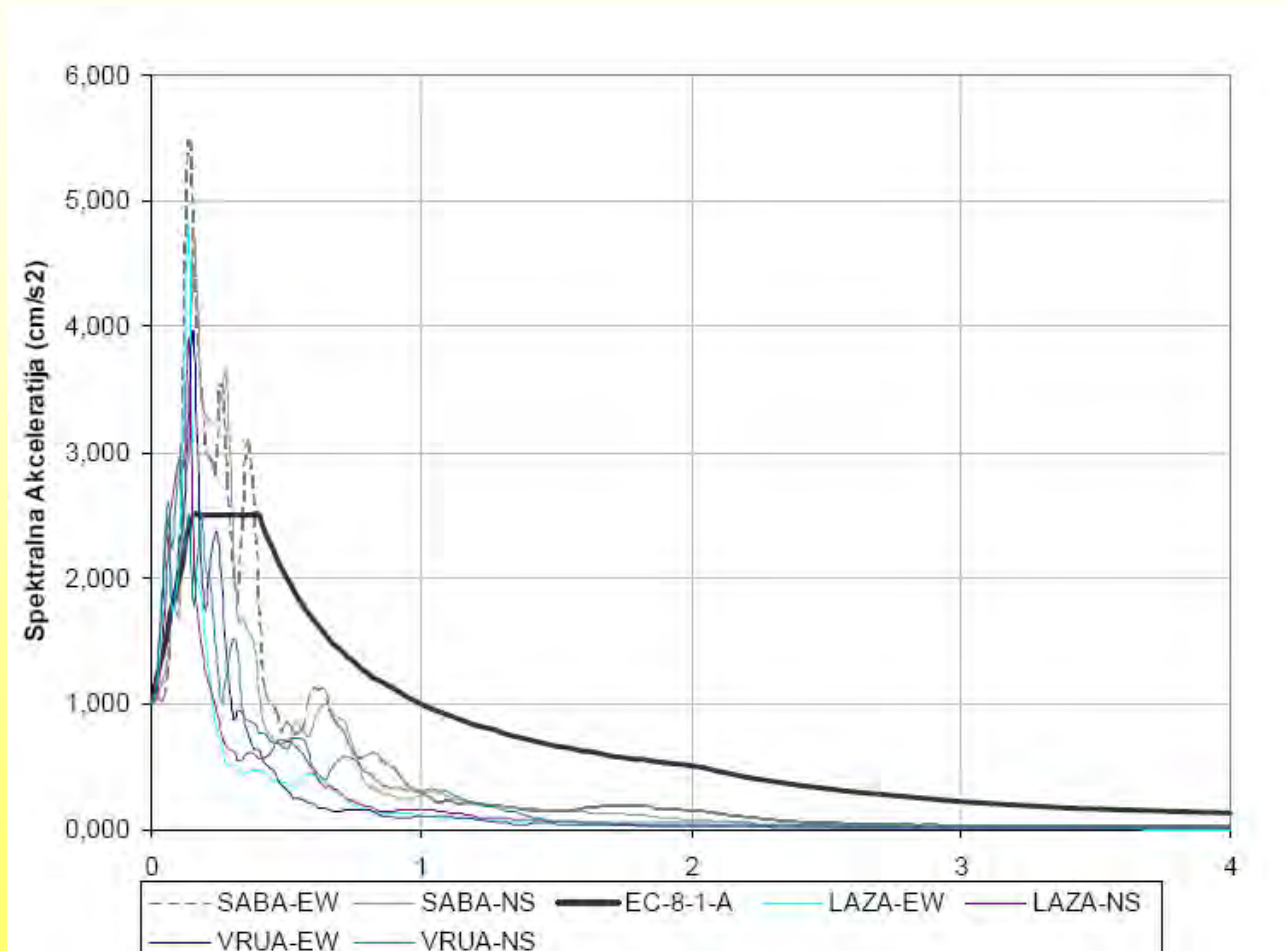
The mean value of the elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



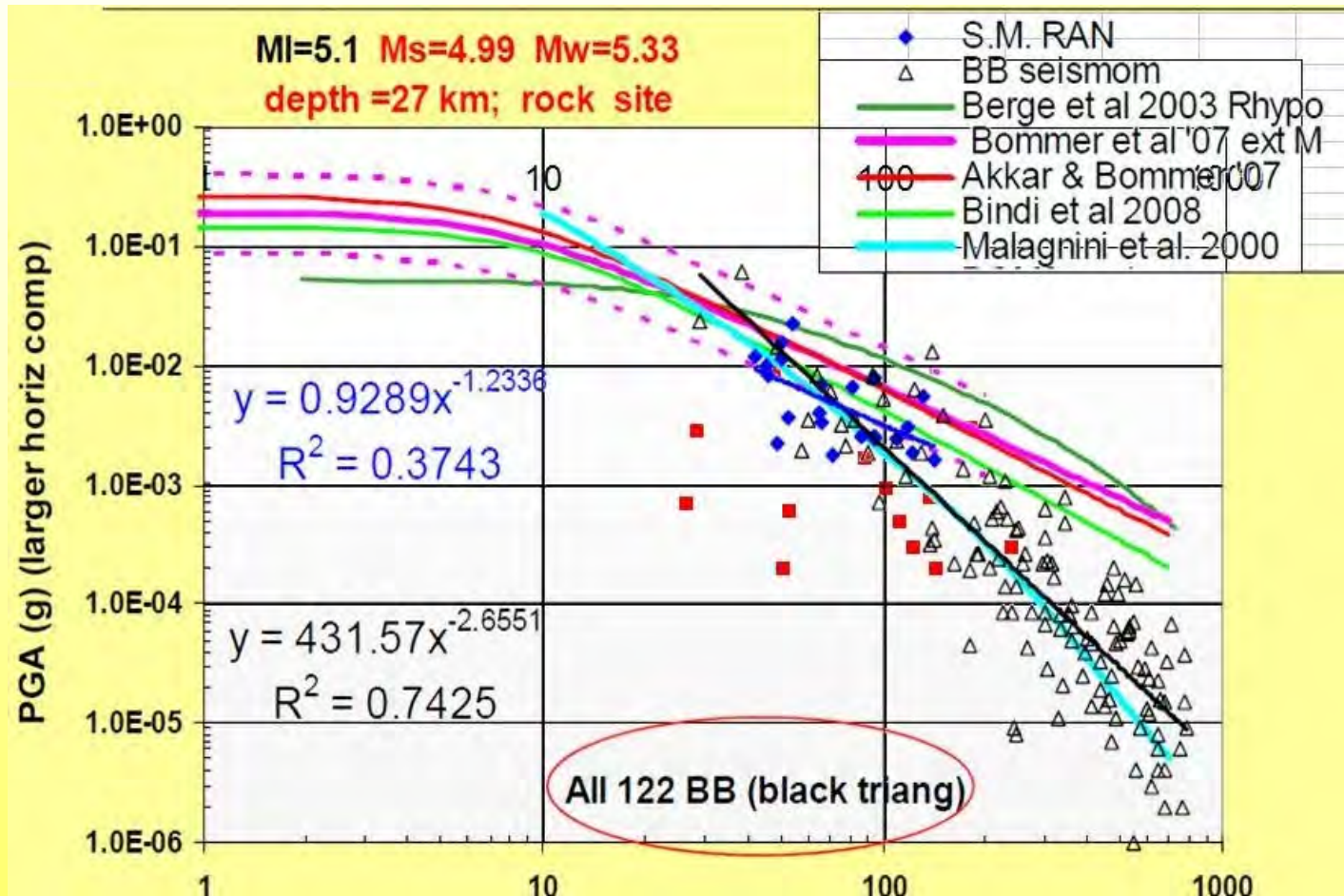
Elastic response spectrum for time history of acceleration at the local soil type D after EC 8-1 damping 5%



Gorazde earthquake elastic response spectrum for time history of acceleration at the local soil type A after EC 8-1 damping 5%



PGA distribution with distance



ANALYSIS OF RECORDED TIME HISTORY OF ACCELERATION

CORRECTED ACCELEROGRAM

CHAN 1

UNCORRECTED ACCELEROGRAM DATA

PROCESSED: 04/22/2010

AJ061.EVT

03/10/2010 13:38:14 (GMT)

(ORIGIN: 03/10/2010 13:38:14 GMT)

TRIGGER TIME: 3/10/2010 13:38:17.600 GMT

STATION NO. 44.809N 20.471E ETNA S/N 644 (4 CHNS OF 4 AT STA)

ETNA S/N 6442

CHAN 1: EAST (STA CHN: 1)

AJ061.EVT

03/10/2010 13:38:14 (GMT)

HYPOCENTER: 0.000N 0.000E H= 0.0KM ML= 0.00

INSTR PERIOD = 0.0050 SEC, DAMPING = 0.7000, SENSITIVITY = 1.252 VDC/G

RECORD LENGTH = 24.000 SEC

UNCOR MAX = 0.010 G, AT 2.195 SEC

RMS ACCEL OF (UNCOR) RECORD = 0.001 G

ACCELEROGRAM BANDPASS FILTERED WITH RAMPS AT 0.060-0.120 AND 43.00-45.00 CYC/SEC

4800 POINTS OF INSTRUMENT- AND BASELINE-CORRECTED ACCEL, VELOC, AND DISPL DATA

AT EQUALLY-SPACED INTERVALS OF 0.005 SEC.

PEAK ACCELERATION = 9.324 CM/SEC/SEC AT 5.795 SEC.

PEAK VELOCITY = 0.274 CM/SEC AT 5.760 SEC.

PEAK DISPLACEMENT = 0.019 CM AT 5.110 SEC.

INITIAL VELOCITY = -0.002 CM/SEC; INITIAL DISPLACEMENT = -0.001 CM

AJ061.EVT

03/10/2010 13:38:14 (GMT)

Earthquake :

Peć –Istok 2010-03-10 13:38:04,8

Region : Srbija

latitude: 42.739 N

longitude:20.588 E

depth:12 km

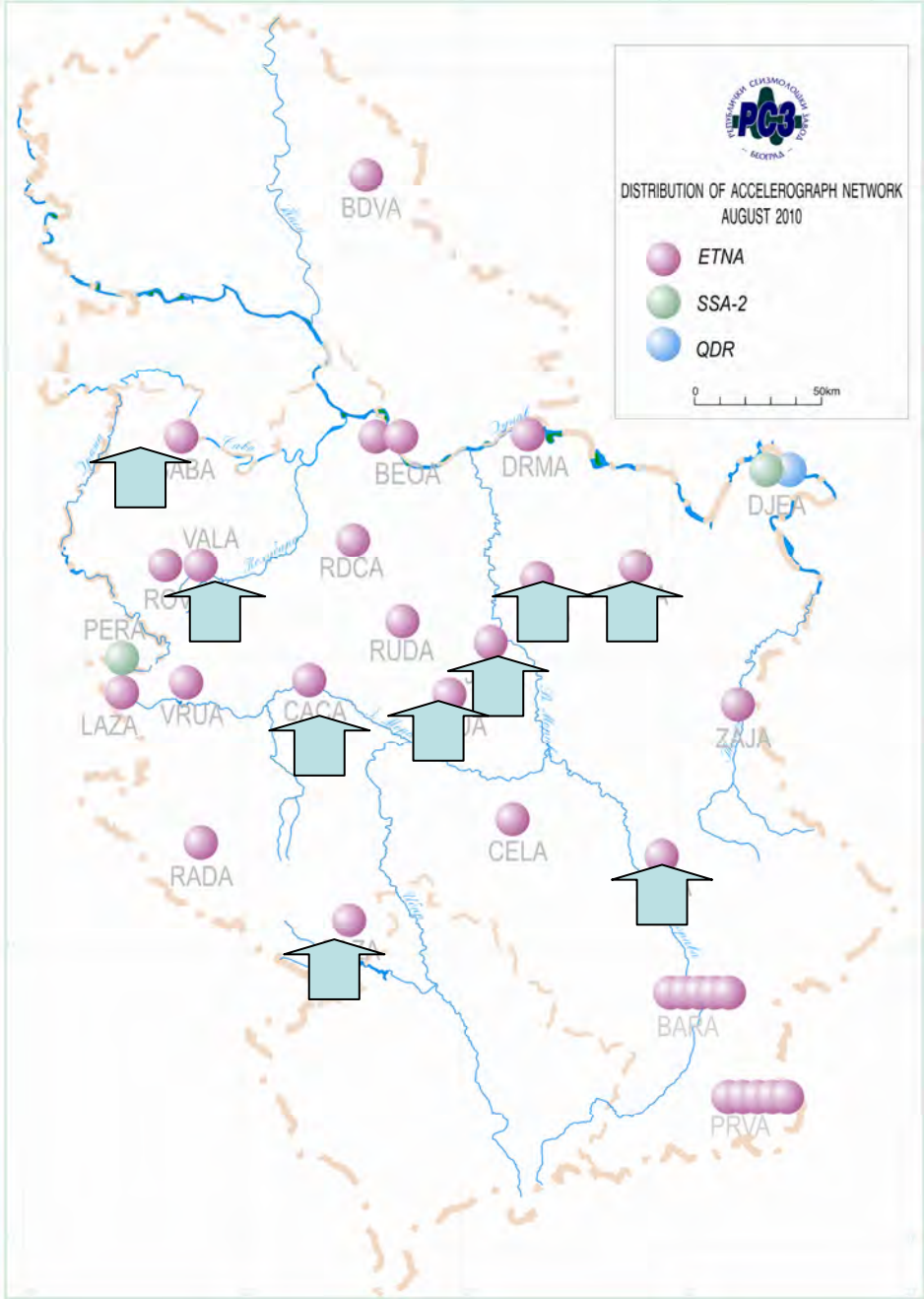
mechanism: faults

magnitudeMw:4.7

intensity: VI EMS

Acceleration recorded at the following stations:

- 1. Novo Pazarska Banja**
- 2. Čelije**
- 3. Radojnja**
- 4. Šabac**
- 5. Niš**
- 6. Barje, mreža od 5 akcelerografa**
- 7. Svilajnac**
- 8. Vrutci**



**Vs profile of
local soil**

CONCLUSION

- **Completed recording, given their quality and knowledge of the velocity profile of the local soil, will significantly contribute to the standardization of local soil for the territory of Serbia and the definition of national parameters for the local soil.**



Thank You