

**ACHAIA-ILIA (GREECE) EARTHQUAKE OF JUNE 8, 2008 (M6.5):
STRONG GROUND MOTION RECORDED BY ITSAK
PERMANENT ACCELEROGRAPH NETWORK**

On June 8, 2008, 12:25GMT, a strong (M6.5) earthquake struck the NW Peloponnesos and particularly the Achaia and Ilia prefectures. Strong ground motion generated by the mainshock recorded by the ITSAK permanent accelerograph network installed in the broader epicentral area. On the map of figure 1 the epicenter of the mainshock, its focal mechanism and about one day aftershock activity (see Geophysical Lab., Aristotle Univ. Thessaloniki), are shown. On the same figure, five (5) strong motion stations of the permanent network that recorded the mainshock's ground motion and are connected to ITSAK by telephone telemetry, are also shown [Patras (PAT3), Vartholomio (VAR2), Pyrgos (PYR1), Zakynthos (ZAK2) and Argostoli (ARG1)].

Mainshock's acceleration time histories as well as their response spectra for $D=0.05$, in ASCII format, for the aforementioned five (5) accelerograph stations are available at the ITSAK web page (www.itsak.gr).

These recordings may be used by scientists, engineers as well as any relevant authority (EPP0, Ministry Environment & Public Works, etc) to evaluate structural response and damage caused by the mainshock.

Information on the site and instrument housing of the accelerographs as well as on the recorded peak ground acceleration are briefly presented in the following table.

City	Instrument Site			Peak Ground Acceleration
	Housing Building	Installation Place in the building	Station Code	
Patras	6th High School(Ag. Alexios)	Ground level	PAT3	0.09g
Vartholomio	OTE [Nat. Telecom. Organ.]	Ground level	VAR2	0.17g
Pyrgos	Agricultural Bank of Greece	Basement	PYR1	0.19g
Zakynthos	OTE [Nat. Telecom. Organ.]	Ground level	ZAK2	0.04g
Argostoli	OTE [Nat. Telecom. Organ.]	Basement	ARG1	0.03g

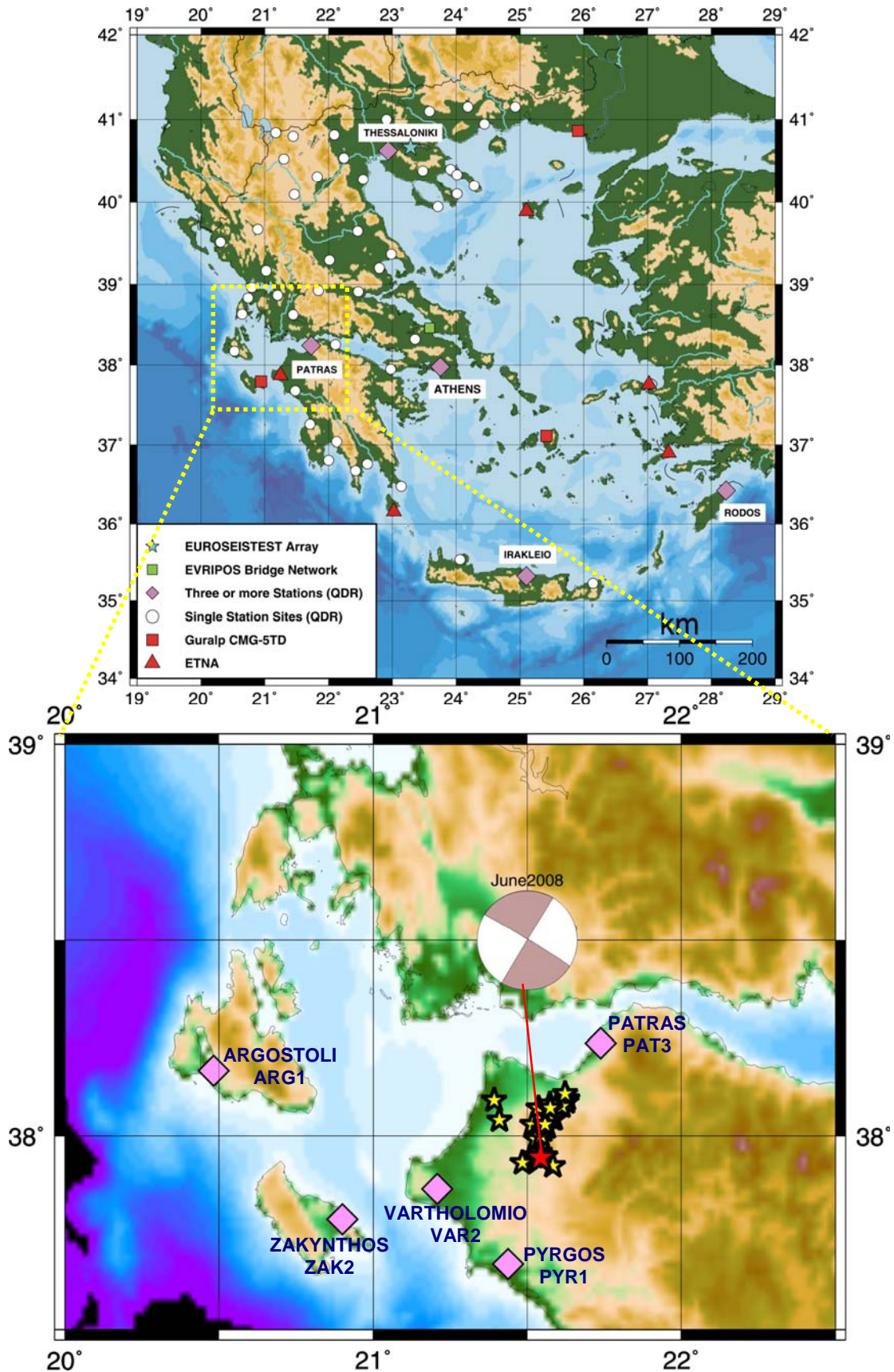


Fig. 1: [Top] ITSAK permanent strong motion network. [Bottom] Focal mechanism, mainshock epicenter (red star), aftershocks (yellow stars) [Geophysical Lab. Univ. Thessaloniki] and selected accelerograph stations of the ITSAK permanent strong motion network (diamonds).

In the following plots accelerograms of three stations recorded the highest peak ground accelerations (PYR1, VAR2, PAT3) are shown as well as corresponding elastic response spectra for critical damping $D=0.05$. In addition, observed elastic response spectra are compared with the elastic design ones of the Greek Seismic Code, for the seismic zone II (effective acceleration 0.24g) and for soil categories A, B, C.

Orientation of the horizontal components (azimuth from North in degrees) and peak ground accelerations recorded in all three axes for the aforementioned stations are given in the following table.

Vartholomio (VAR2)	Pyrgos(PYR1)	Patra(PAT3)
L-comp. [270N]: PGA=0.18g	L-comp. [167N]: PGA=0.15g	L-comp. [270N]: PGA=0.08g
T-comp. [0N]: PGA=0.16g	T-comp. [77N]: PGA=0.19g	T-comp.[180N]: PGA=0.09g
Z-comp. [vertical]: PGA=0.10g	Z-comp. [vertical]: PGA=0.09g	Z-comp. [vertical]: PGA=0.08g

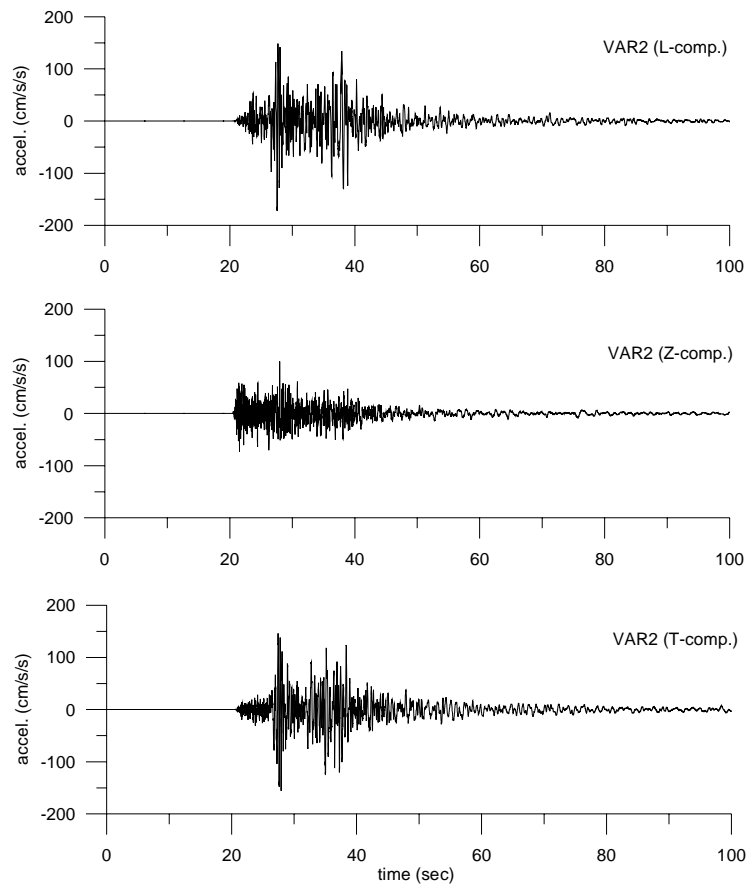


Fig. 2: Accelerogram of the mainshock (8/6/2008, M6.5) recorded at the Vartholomio (VAR2) station.

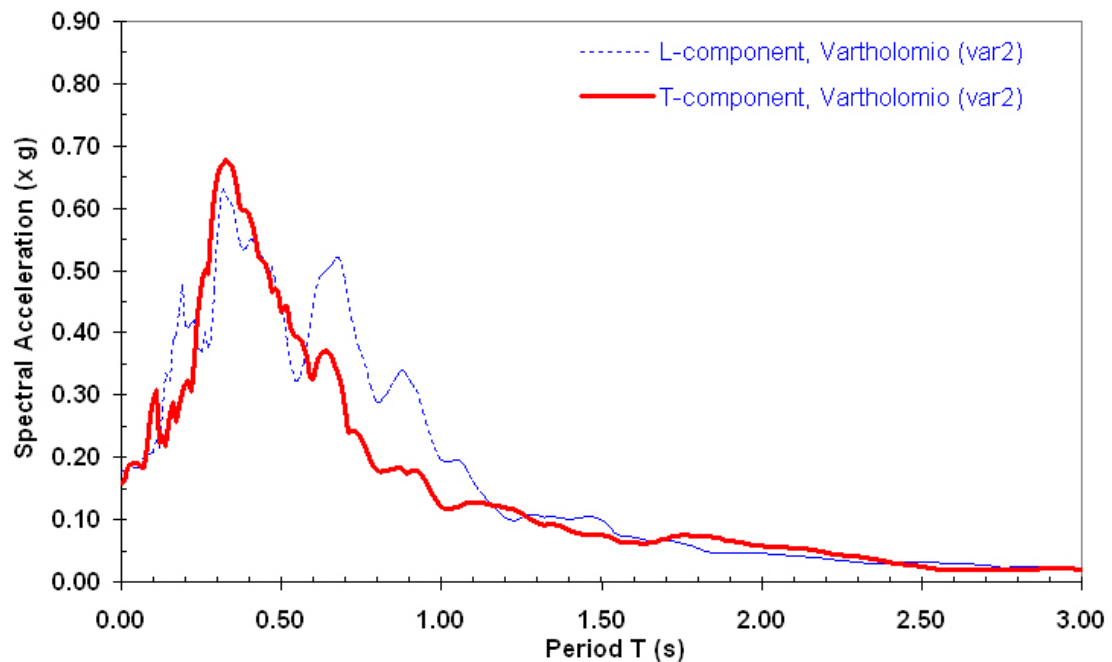


Fig. 3: Elastic horizontal response spectra of the mainshock (8/6/2008, M6.5) recorded at the Vartholomio (VAR2) station.

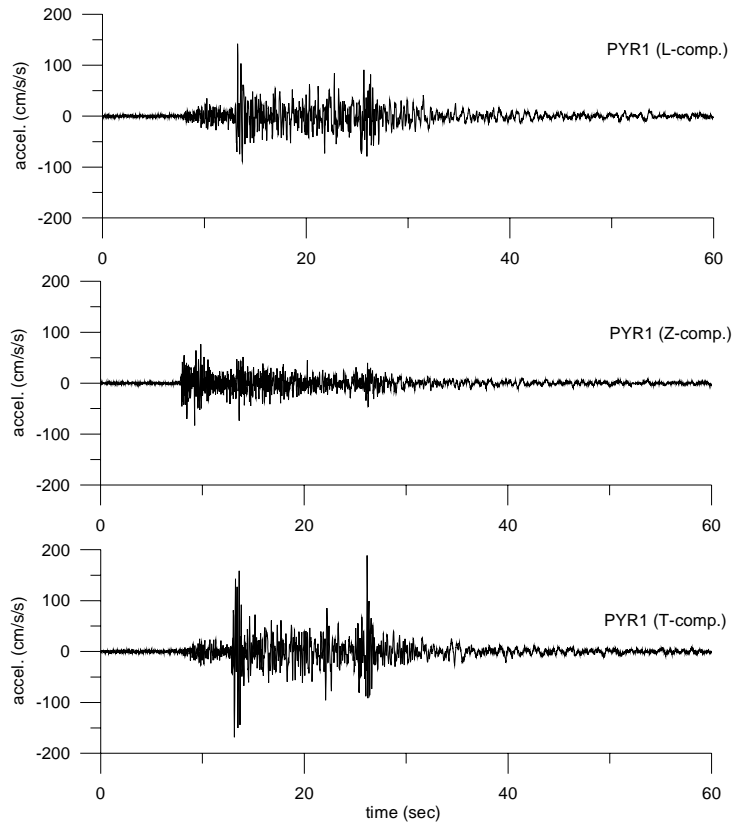


Fig. 4: Accelerogram of the mainshock (8/6/2008, M6.5) recorded at the Pyrgos (PYR1) station.

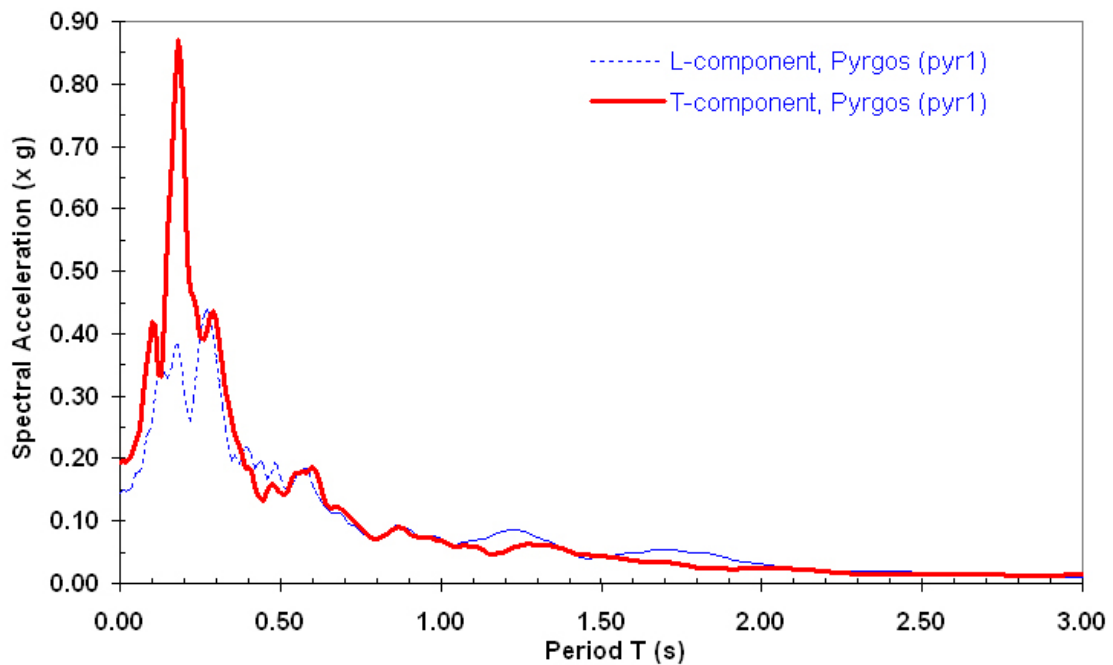


Fig. 5: Elastic horizontal response spectra of the mainshock (8/6/2008, M6.5) recorded at the Pyrgos (PYR1) station.

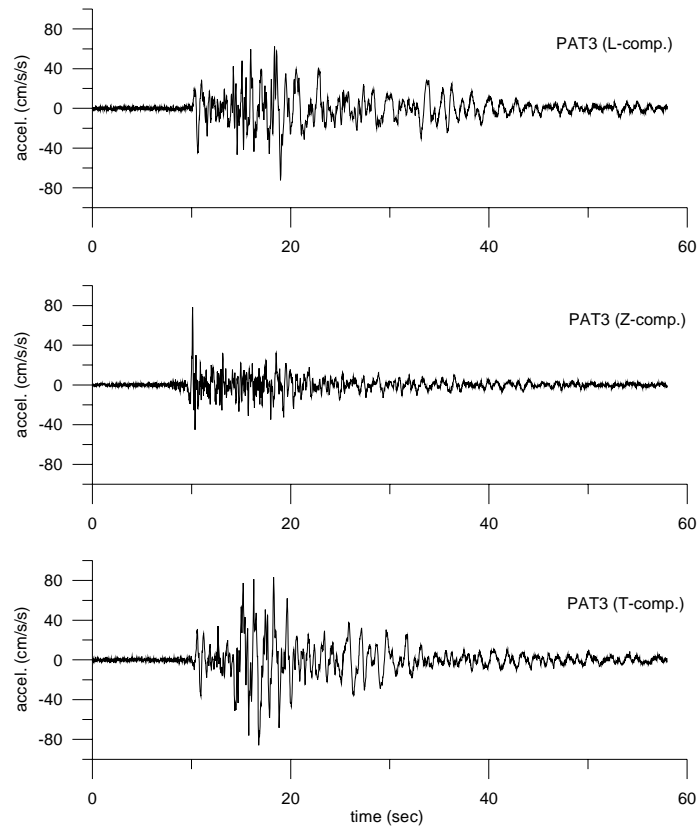


Fig. 6: Accelerogram of the mainshock (8/6/2008, M6.5) recorded at the Patras (PAT3) station.

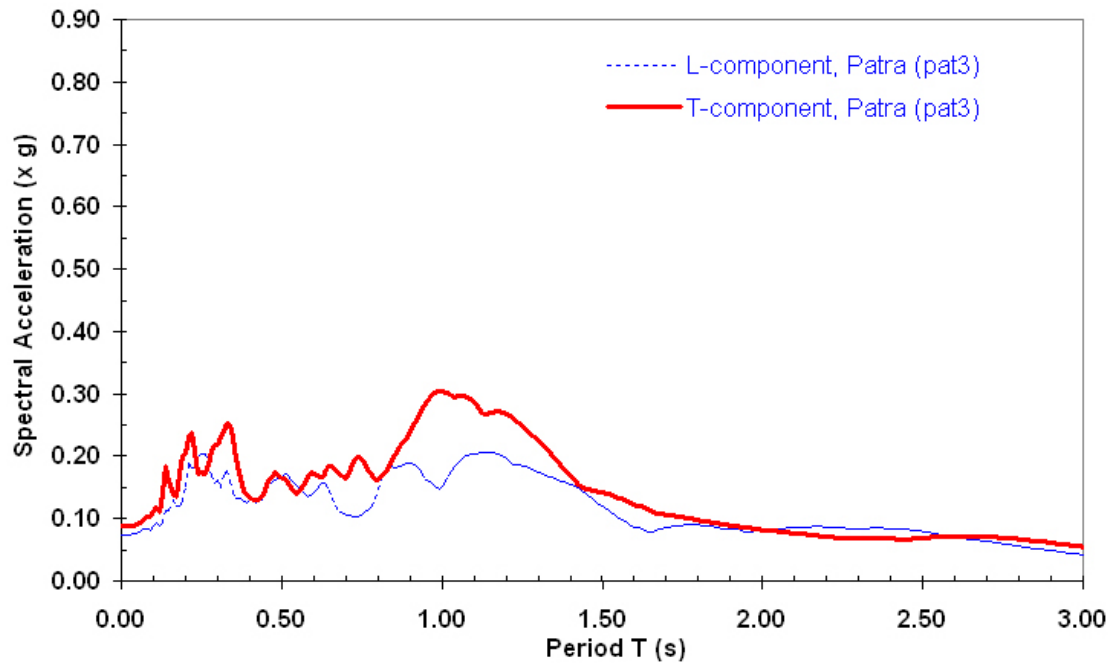


Fig. 7: Elastic horizontal response spectra of the mainshock (8/6/2008, M6.5) recorded at the Patras (PAT3) station.

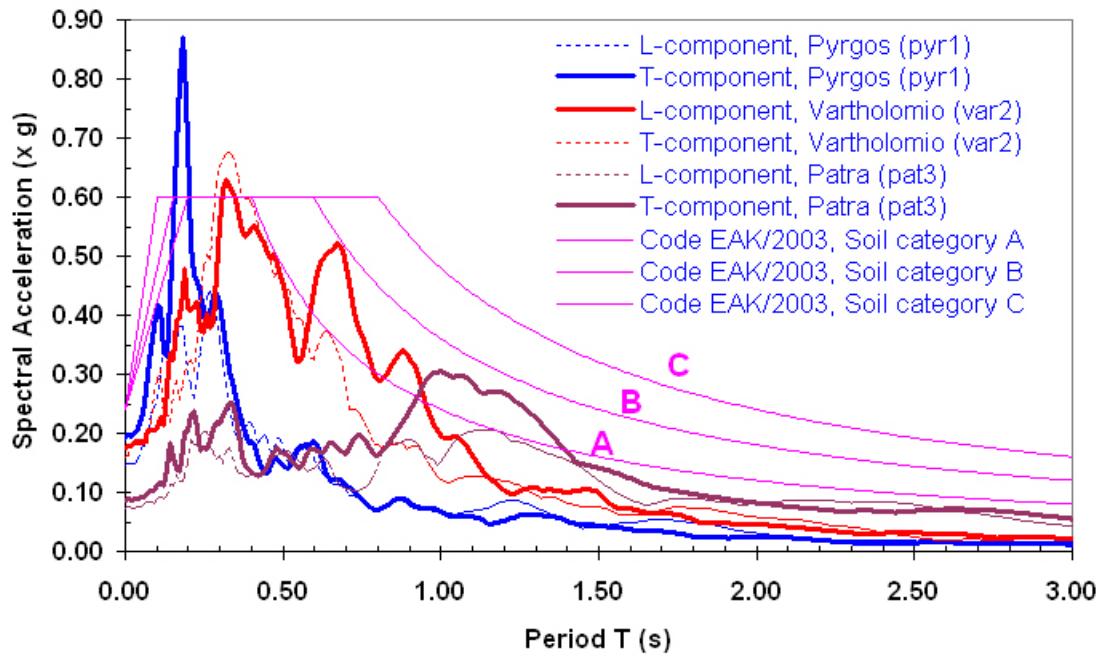


Fig. 8: Elastic horizontal response spectra ($D=0.05$) of the mainshock (8/6/2008, M6.5) recorded at the Vartholomio, Pyrgos, Patras, stations compared to the elastic horizontal design spectra recommended by the Greek seismic code for the seismic zone II (0.24g) and for soil categories A, B, C.

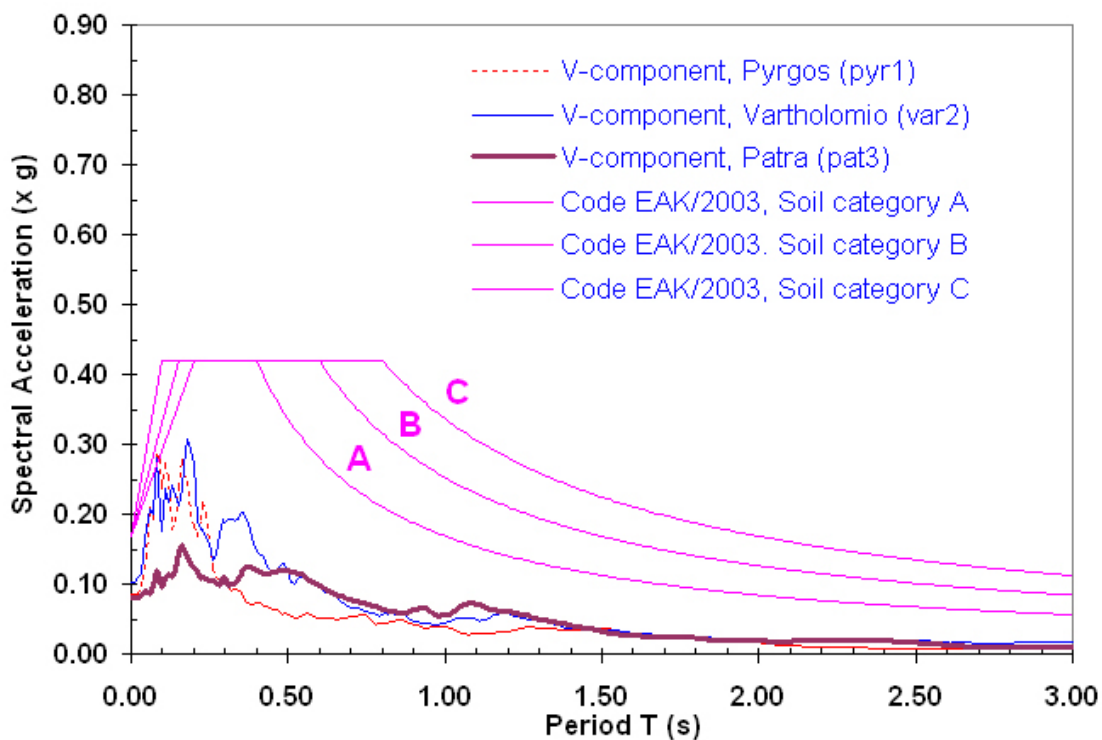


Fig. 9: Elastic vertical response spectra ($D=0.05$) of the mainshock (8/6/2008, M6.5) recorded at the Vartholomio, Pyrgos, Patras, stations compared to the elastic vertical design spectra recommended by the Greek seismic code for the seismic zone II (0.24g) and for soil categories A, B, C.