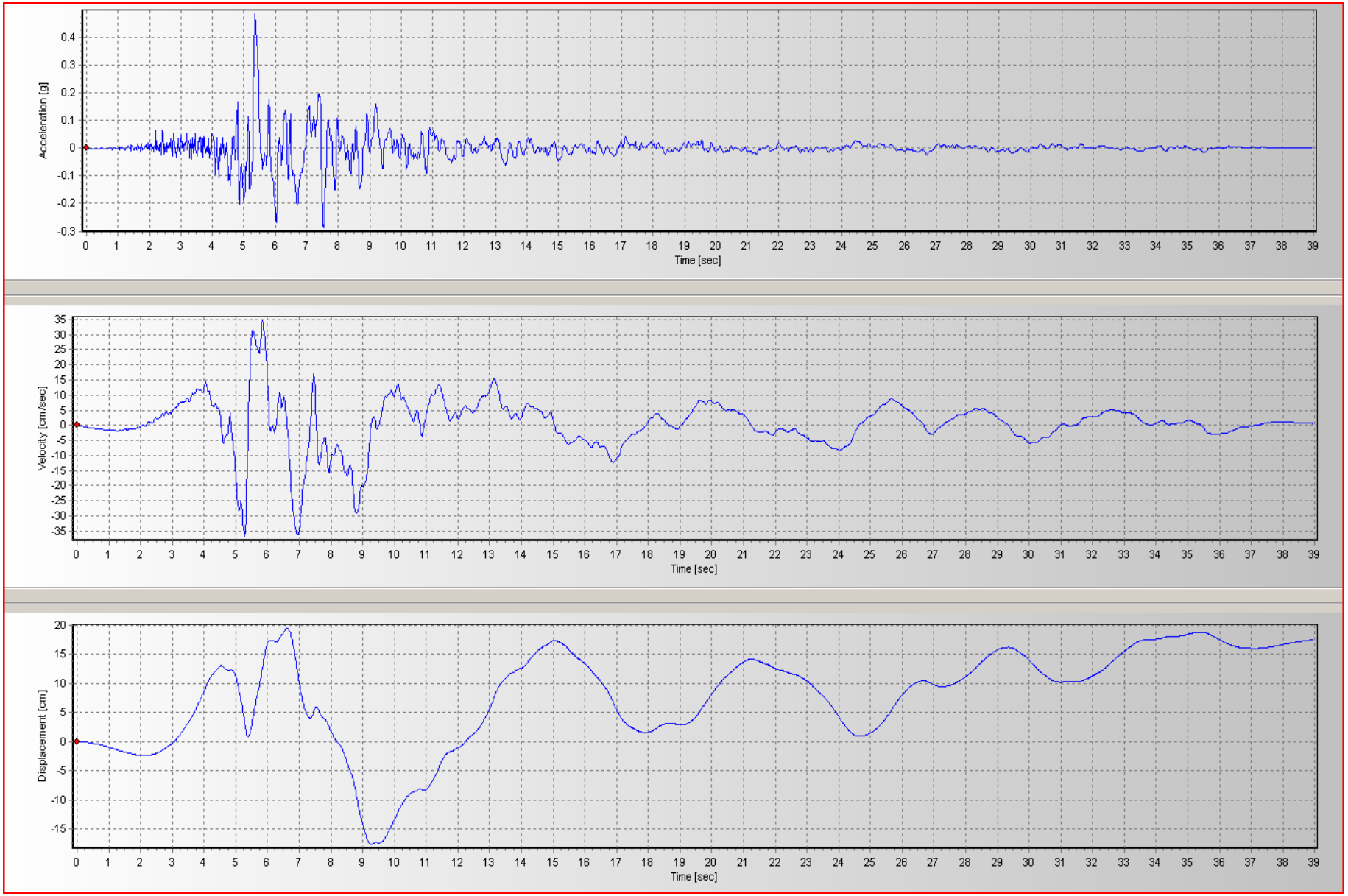
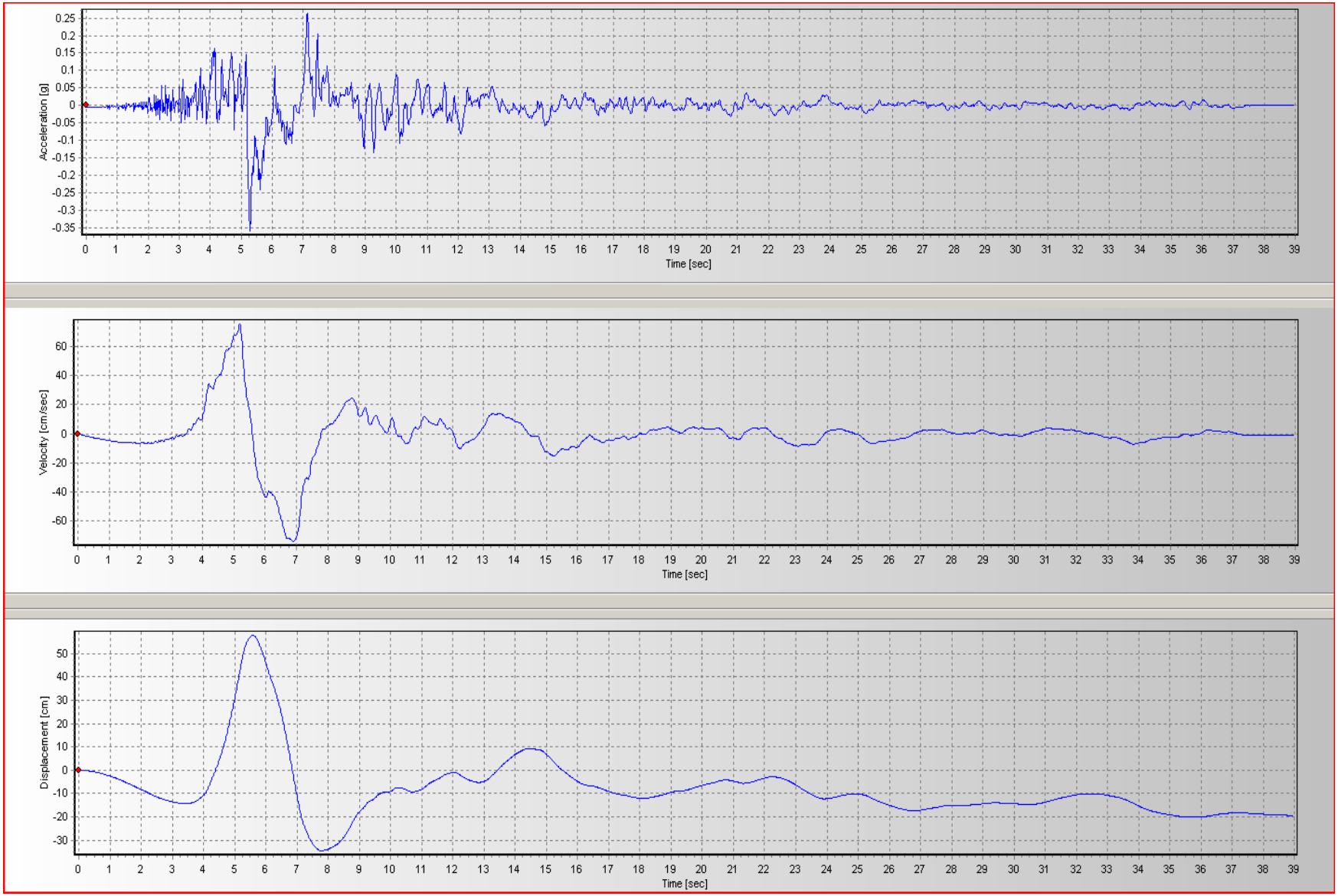
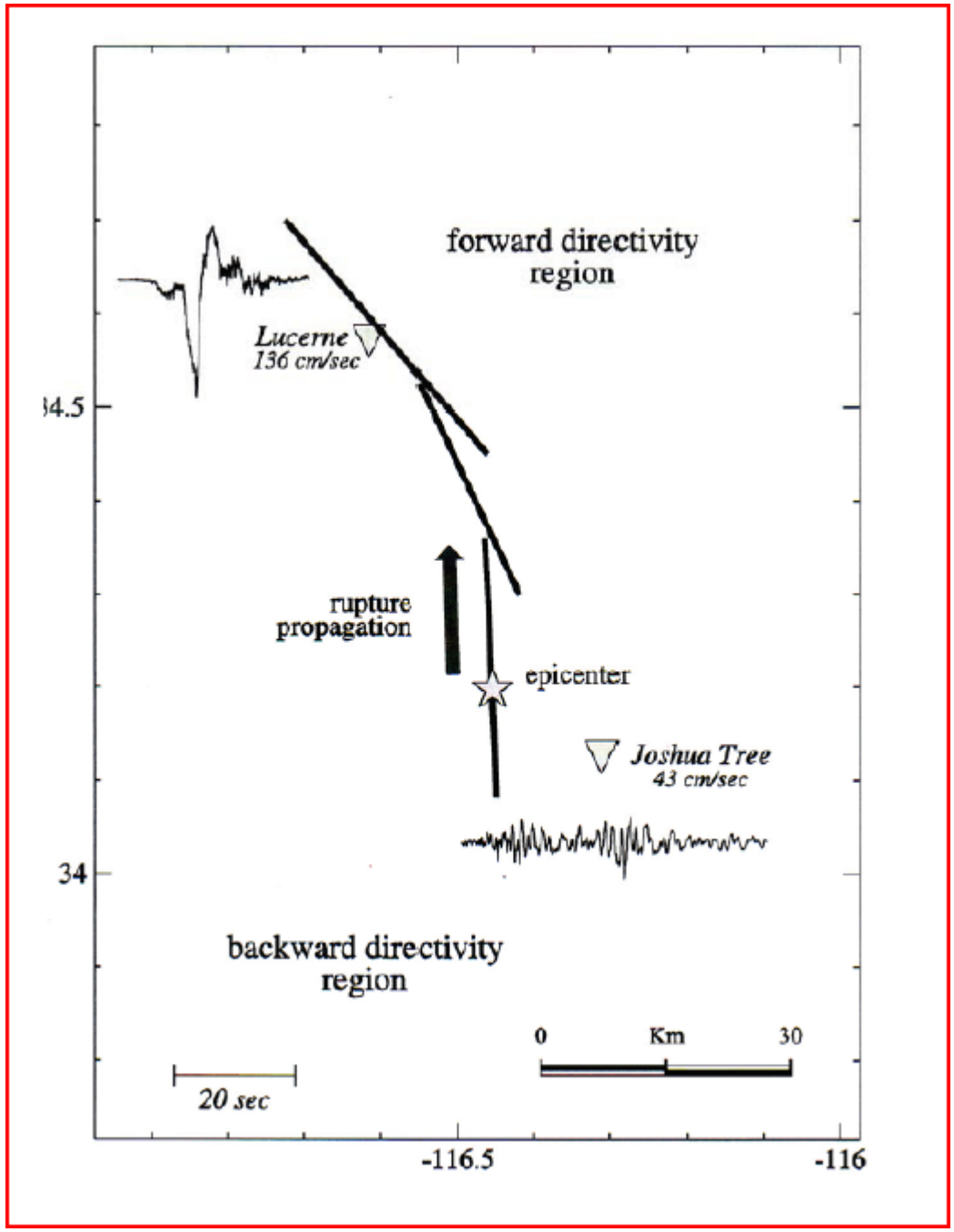
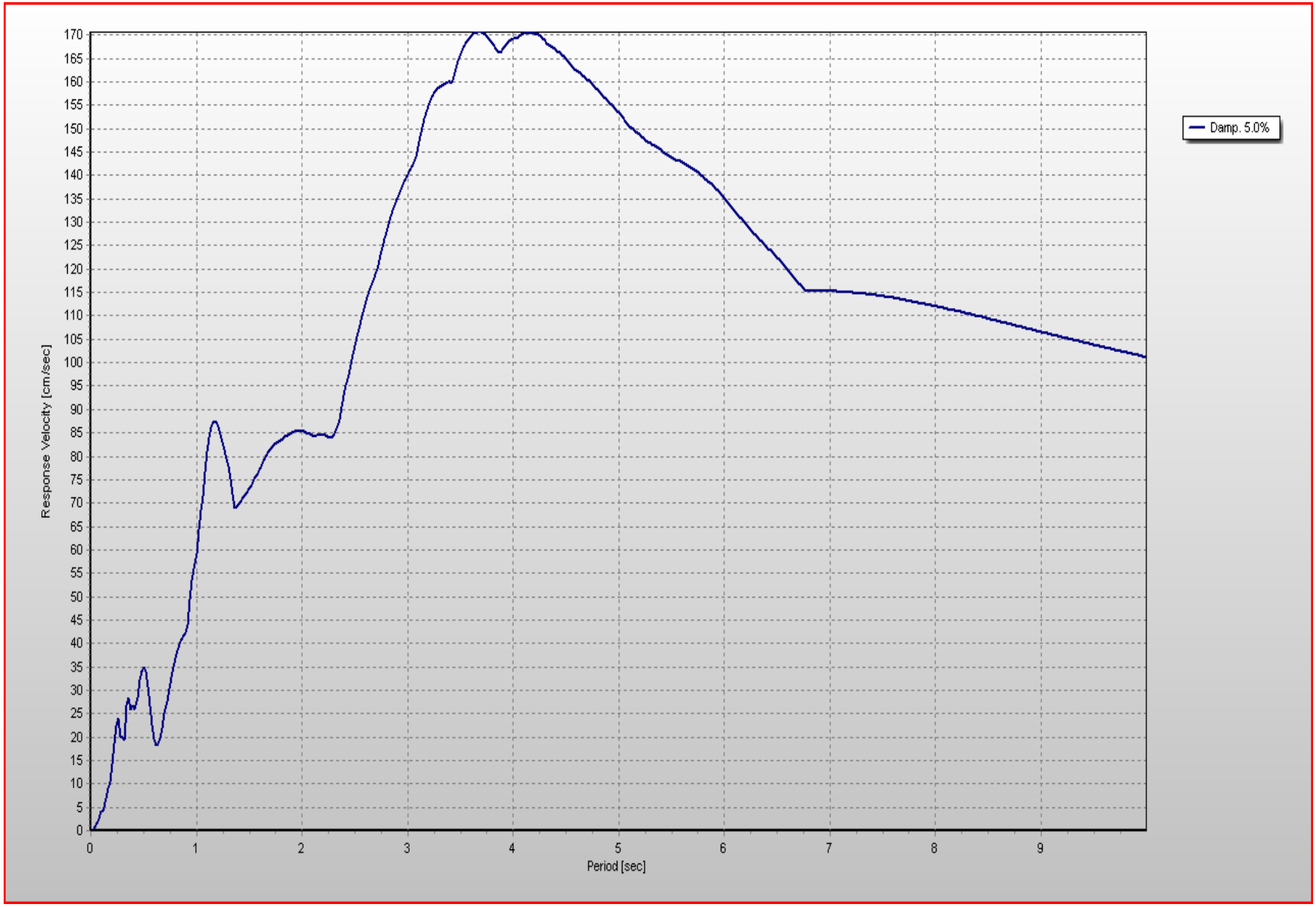

Acceleration [g]
Time [sec]
Velocity [cm/sec]
Time [sec]
Displacement [cm]
Time [sec]

PO176L

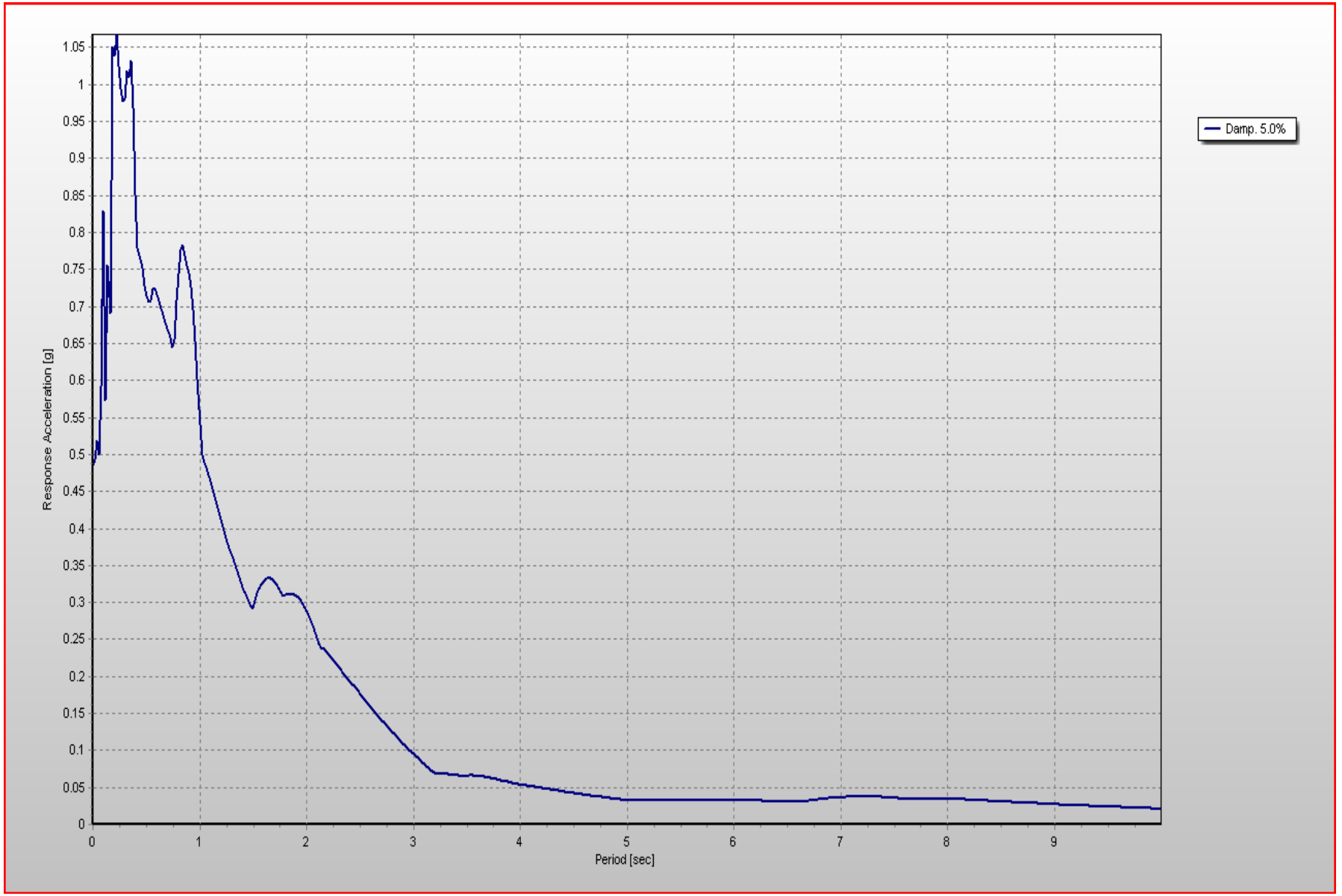

Acceleration [g]
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
-0.35
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
Time [sec]
Velocity [cm/sec]
60
40
20
0
-20
-40
-60
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
Time [sec]
Displacement [cm]
50
40
30
20
10
0
-10
-20
-30
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
Time [sec]

PO176T

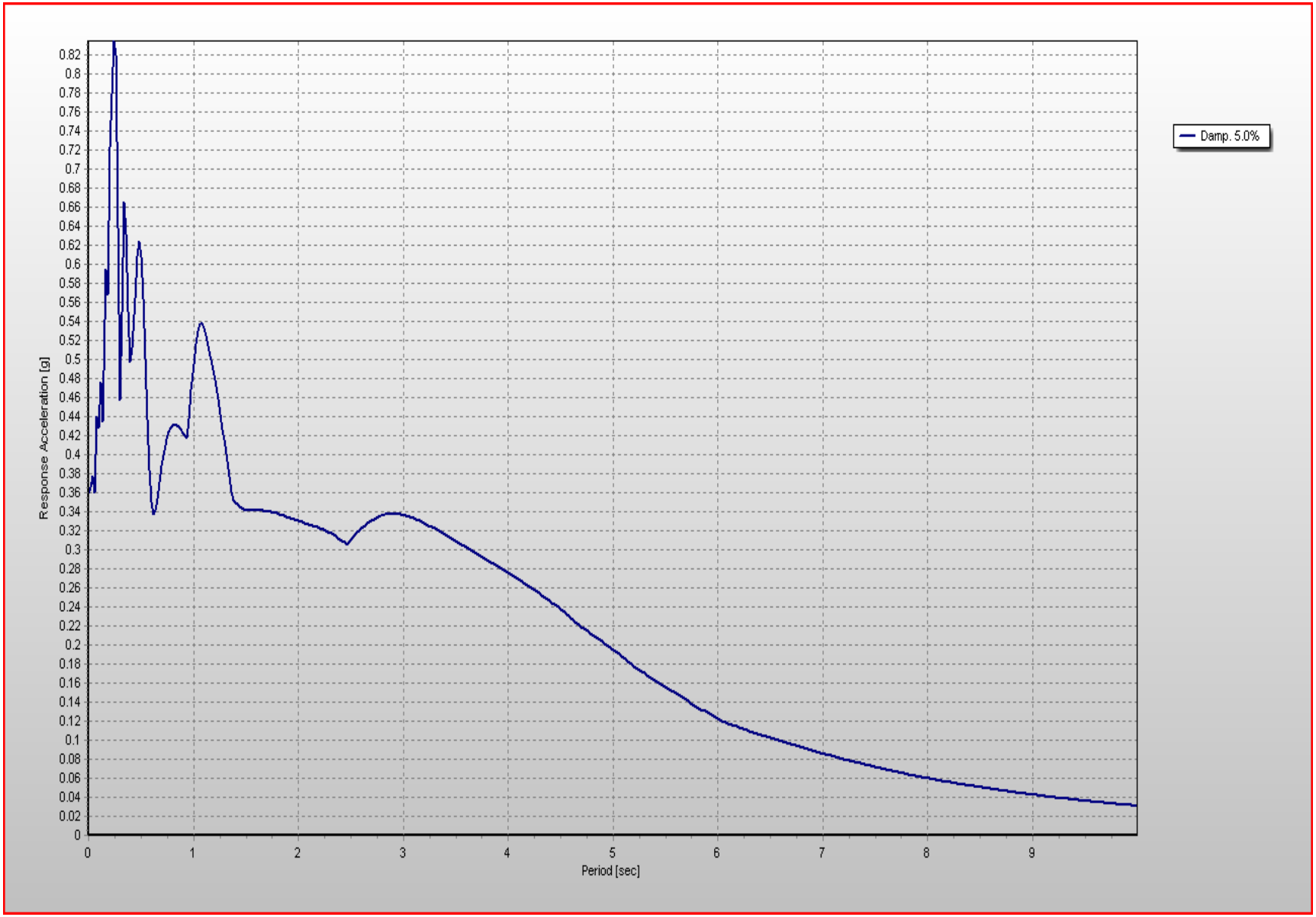

forward directivity
region
Lucerne
136 cm/sec
rupture
propagation
epicenter
Joshua Tree
43 cm/sec
backward directivity
region
0
Km
30
20 sec
34.5
34
-116.5
-116



5% VELOCITY RESPONSE SPECTRUM – max SV for Tp=3.68 sec

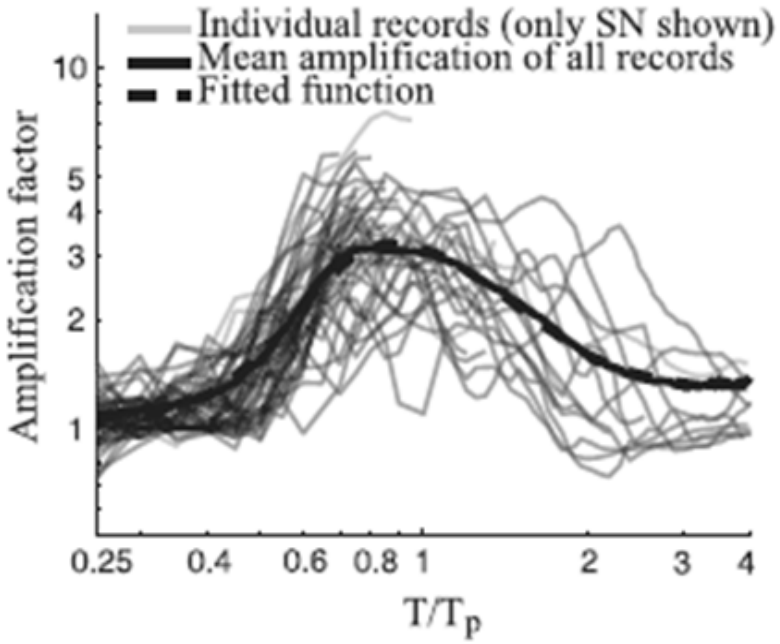


5% ACCELERATION SPECTRUM FOR NON PULSE LIKE PO176L COMPONENT

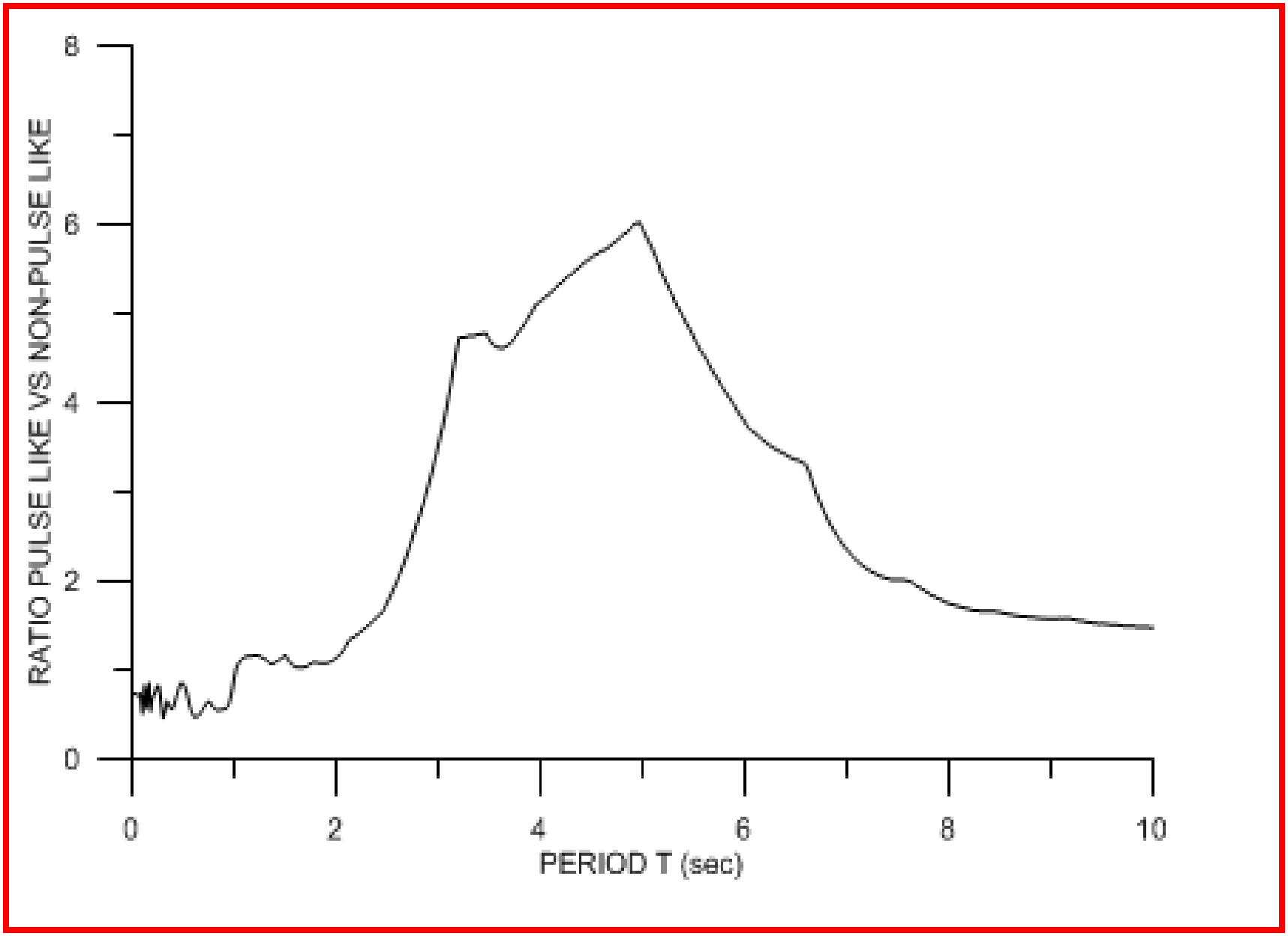


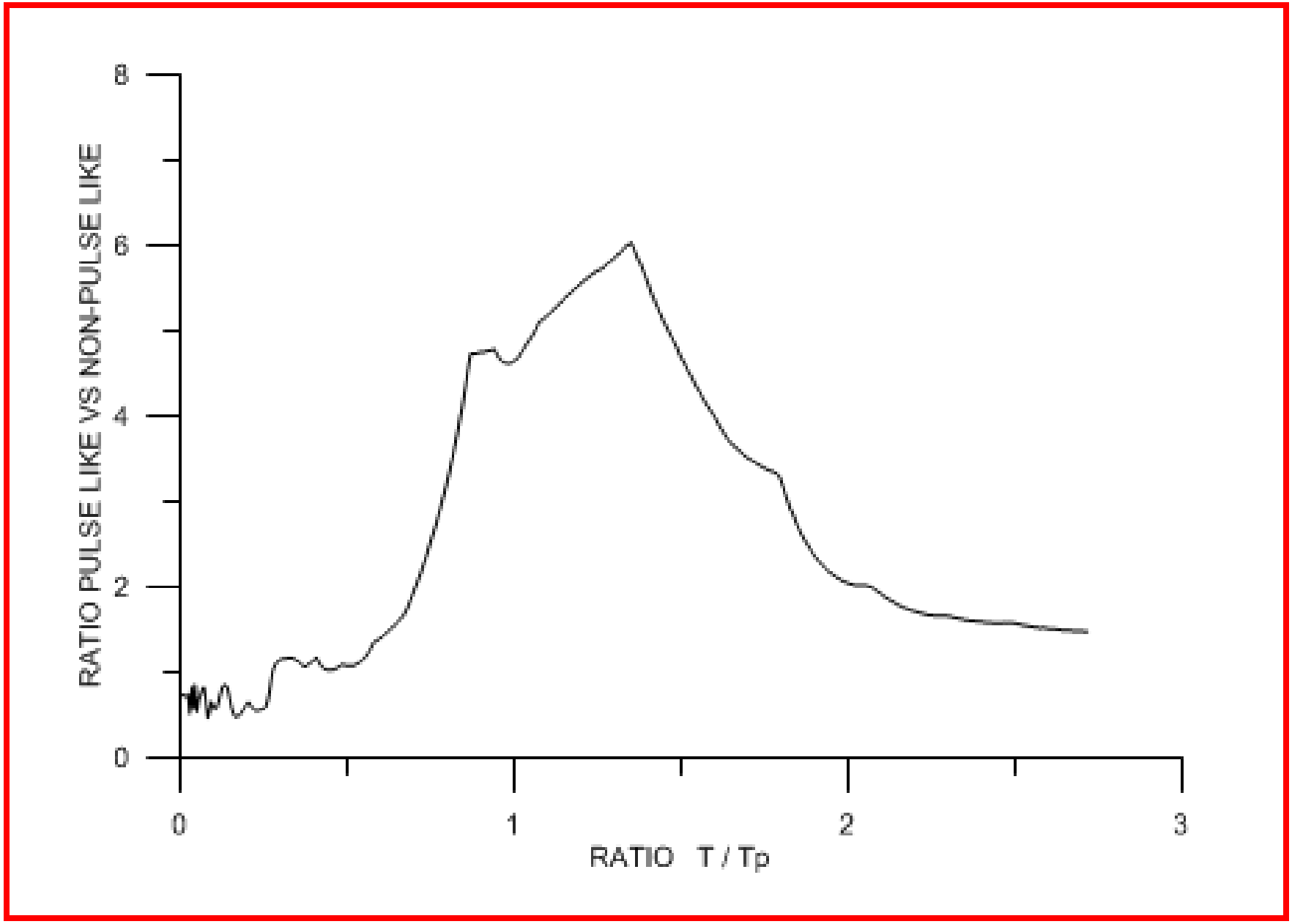
5% ACCELERATION RESPONSE SPECTRUM FOR PULSE-LIKE PO176T COMPONENT

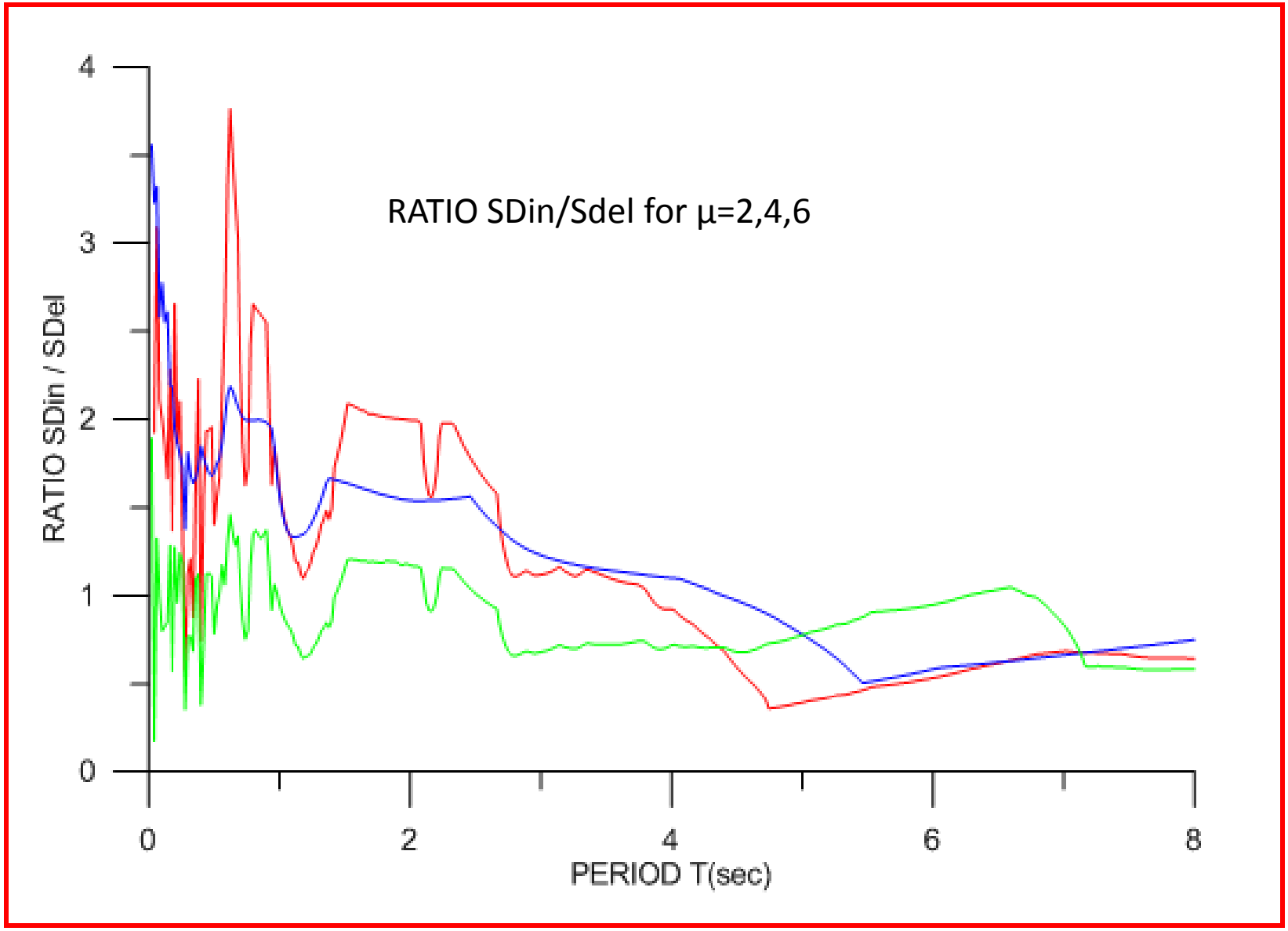
BELL SHAPED AMPLIFICATION AROUND Tp



$$\ln Af = \begin{cases} 1.131 \cdot \exp(-3.11 \cdot [\ln(T/T_p) + 0.127]^2) + 0.058 & \text{για } T \le 0.88 \cdot T_p \\ 0.896 \cdot \exp(-2.11 \cdot [\ln(T/T_p) + 0.127]^2) + 0.255 & \text{για } T > 0.88 \cdot T_p \end{cases}$$

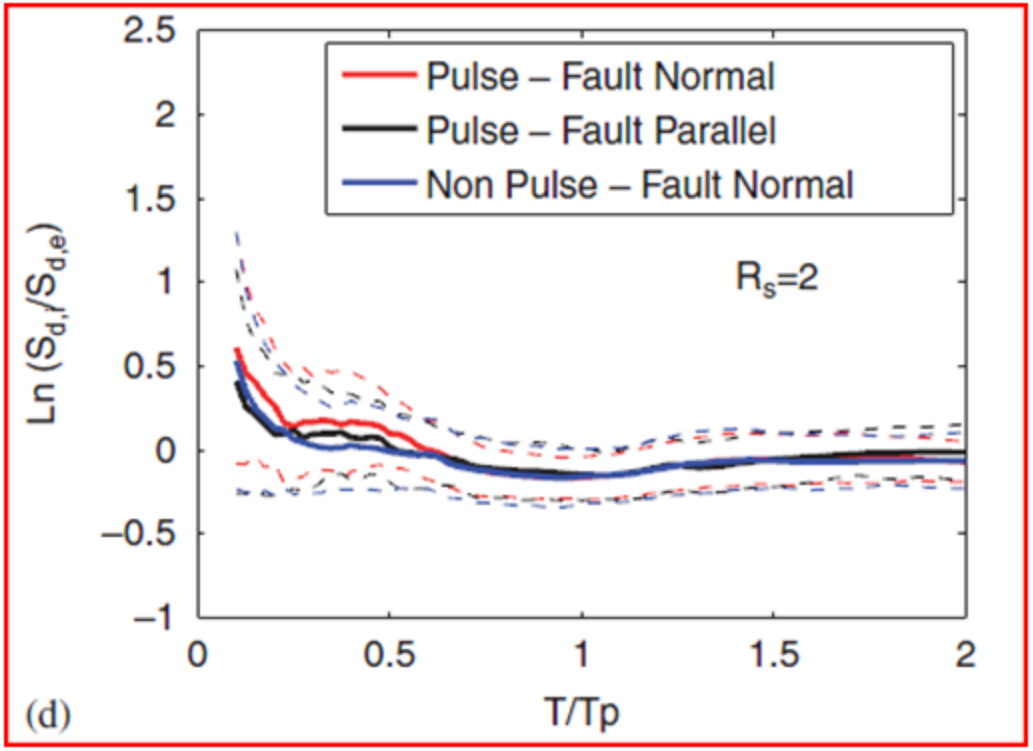

RATIO PULSE LIKE VS NON-PULSE LIKE
0
2
4
6
8
0
2
4
6
8
10
PERIOD T (sec)


RATIO PULSE LIKE VS NON-PULSE LIKE
8
6
4
2
0
0
1
2
3
RATIO T / Tp

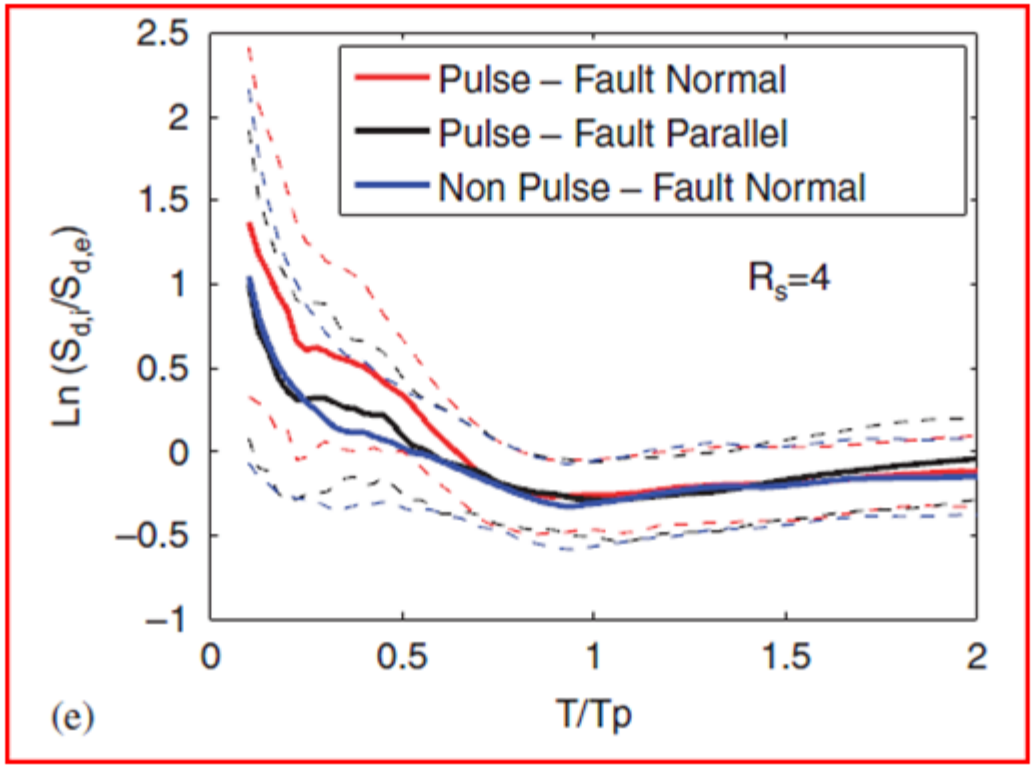

RATIO SDin/Sdel for μ=2,4,6
RATIO SDin / SDel
PERIOD T(sec)
0
1
2
3
4
0
2
4
6
8

INELASTIC VERSUS ELASTIC DISPLACEMENT

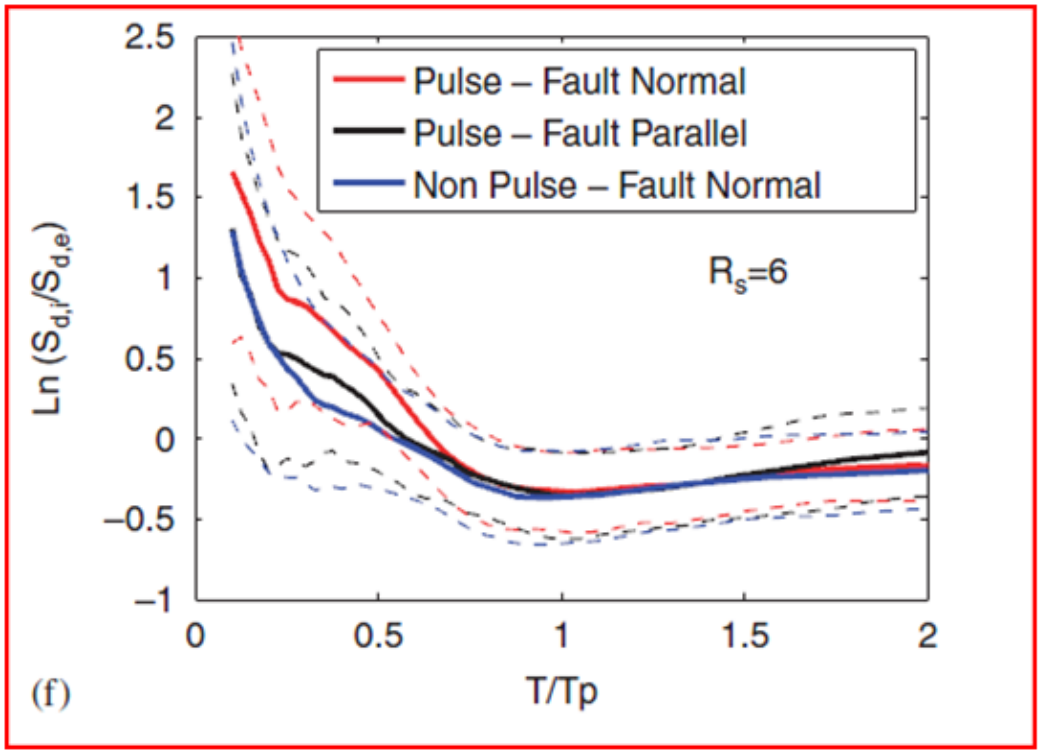
$q_y = R_s$



INELASTIC VERSUS ELASTIC DISPLACEMENT



INELASTIC VERSUS ELASTIC DISPLACEMENT



Inelastic behavior

- Reduction factor:

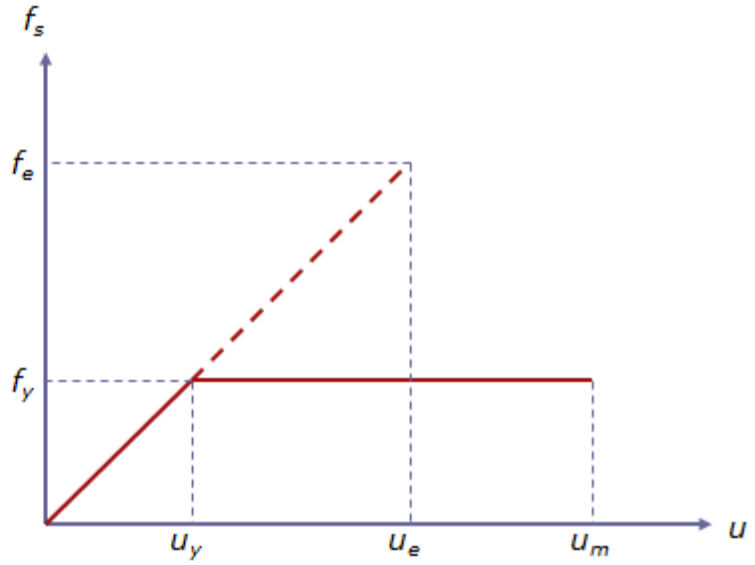
$$q_y = \frac{f_e}{f_y}$$

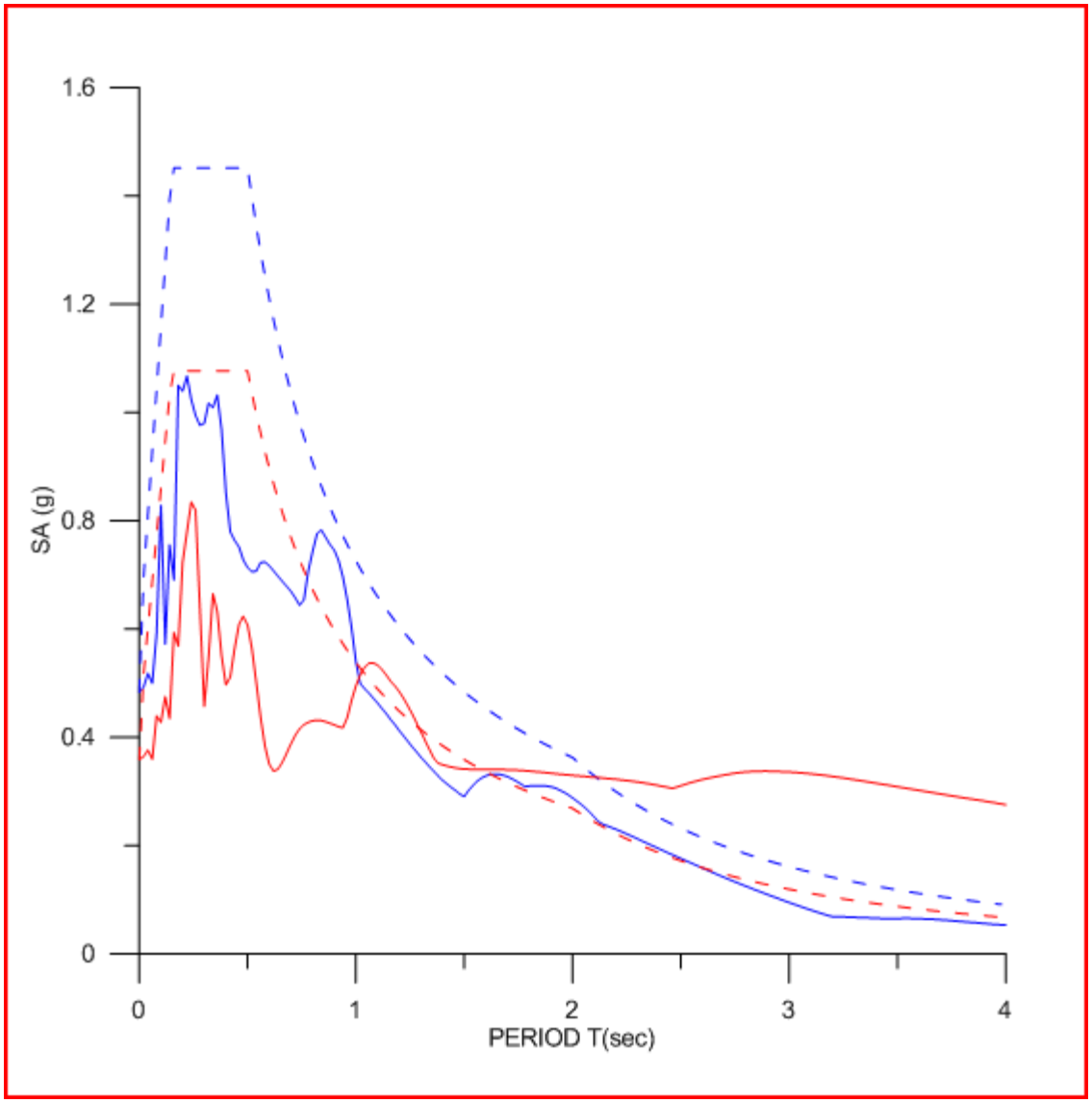
- Ductility coefficient:

$$\mu = \frac{u_m}{u_y}$$

- It is proved that:

$$\frac{u_m}{u_e} = \frac{\mu}{q_y}$$





ACCELERATION SPECTRA FOR PO176L, PO176T AND RELEVANT EC8