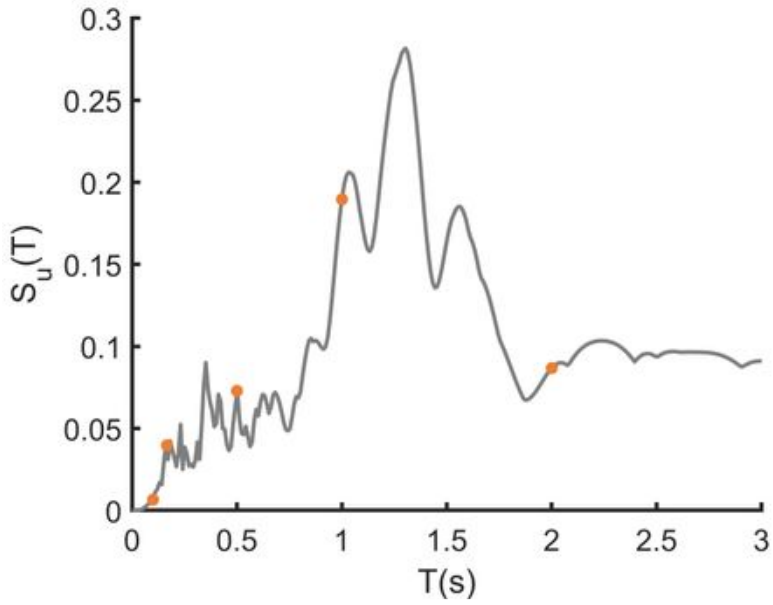
DOS : Response spectra

Number of participants: 5

1. The frequency/period axis of a response spectrum corresponds to

2 correct answers
out of 4 respondents



	The frequency of excitation of the SDOF system	0%	0 votes
✓	The natural frequency of the SDOF system	50%	2 votes
	The frequency of the earthquake	50%	2 votes

2. The spectrum Se used in Eurocode 8 for paraseismic calculations is

0 correct answer
out of 3 respondents

	the relative displacement spectrum	100%	3 votes
	the absolute acceleration spectrum	0%	0 votes
✓	the pseudo acceleration spectrum	0%	0 votes

3. When the damping of the SDOF system is higher, the maximum of the response spectrum

4 correct answers
out of 5 respondents

	increases	0%	0 votes
✓	decreases	80%	4 votes
	remains constant	20%	1 vote

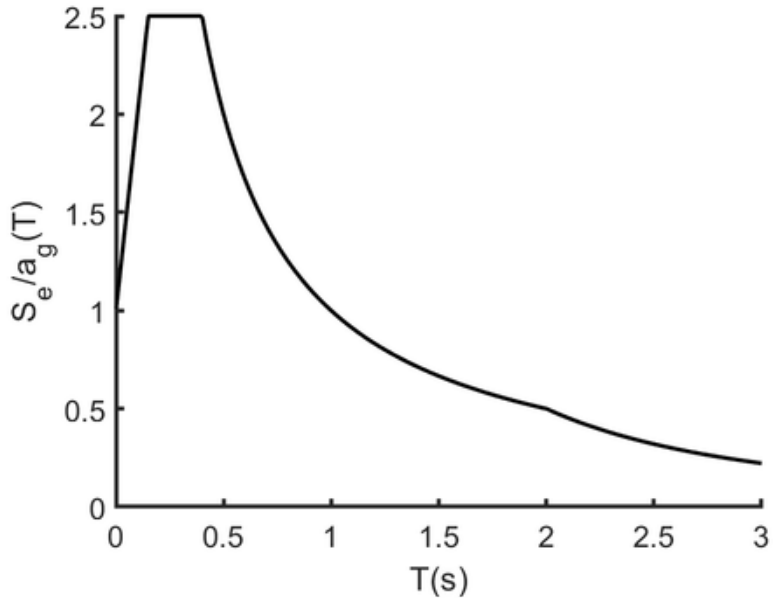
4. The value of Su (relative displacement spectrum) for a specific period T corresponds to

3 correct answers
out of 5 respondents

	the RMS value of the relative displacement of a SDOF system of eigen period T subjected to white noise excitation	20%	1 vote
✓	The max value of the relative displacement of a SDOF system of eigen period T subjected to a specific earthquake	60%	3 votes
	The average value of the relative displacement of a SDOF system when varying the excitation frequency	20%	1 vote

5. The analytical expression of Se given in the Eurocode is

4 correct answers
out of 4 respondents



✓	a function representing the average pseudo-acceleration spectra for different earthquakes occurring in the same region	100%	4 votes
	the average frequency response function of a SDOF system subjected to an earthquake	0%	0 votes
	A curve giving the ground acceleration for specific earthquake types	0%	0 votes

6. The design spectrum Sd in the eurocode corresponds to

0 correct answer
out of 0 respondent

	The relative displacement spectrum as a function of the region and type of soil	0%	0 votes
✓	The elastic spectrum Se divided by a behavior factor in order to take into account inelastic behavior of the SDOF system	0%	0 votes
	The spectrum used by design offices in a CAD software	0%	0 votes

7. For the calculation of efforts and displacements on a MDOF system, the methodology consists in :

3 correct answers
out of 3 respondents

Computing the response of the full model using time-domain simulations	0%	0 votes
Considering each mode as a SDOF system, using the response spectrum and then summing the contributions of all modes to compute the total efforts and displacements	0%	0 votes
✓ Considering each mode as a SDOF system, using the response spectrum and then using SRSS method to combine the modal values and approximate the total efforts and displacements	100%	3 votes

8. The videos are useful to study the material of the course

5 respondents

Yes	100%	5 votes
No	0%	0 votes

9. The wooclap sessions are useful to test our knowledge of the course material

5 respondents