

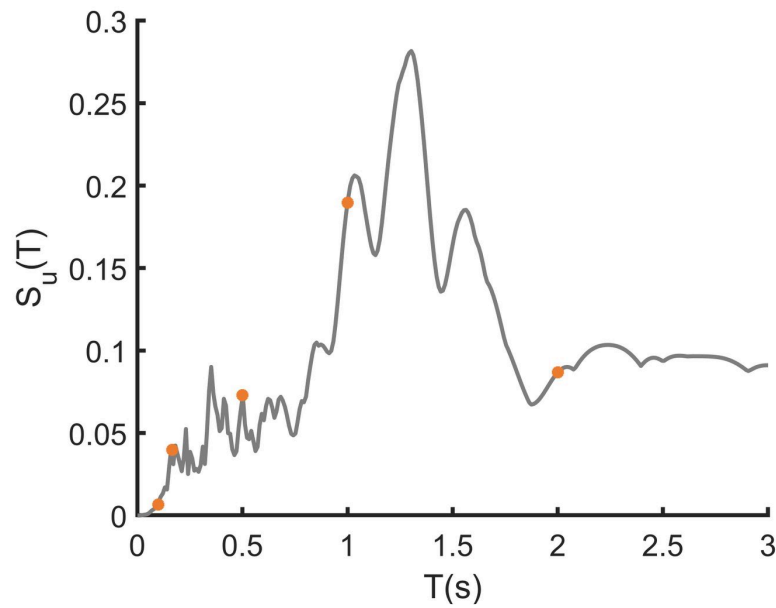
# DOS : Response spectra

Number of participants: 16



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

4 correct answers  
out of 13 respondents



The frequency of excitation of the SDOF system



5 votes

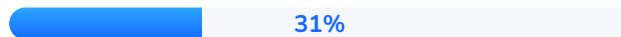


The natural frequency of the SDOF system



4 votes

The frequency of the earthquake



4 votes



## 2. The spectrum $S_e$ used in Eurocode 8 for paraseismic calculations is

**10 correct answers**  
out of 10 respondents

the relative displacement spectrum

0%

0 votes

the absolute acceleration spectrum

0%

0 votes



the pseudo acceleration spectrum

100%

10 votes



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

**12 correct answers**  
out of 12 respondents

increases

0%

0 votes



decreases

100%

12 votes

remains constant

0%

0 votes



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

3 correct answers  
out of 7 respondents

the RMS value of the relative displacement of a SDOF system of eigen period  $T$  subjected to white noise excitation



3 votes



The max value of the relative displacement of a SDOF system of eigen period  $T$  subjected to a specific earthquake



3 votes

The average value of the relative displacement of a SDOF system when varying the excitation frequency

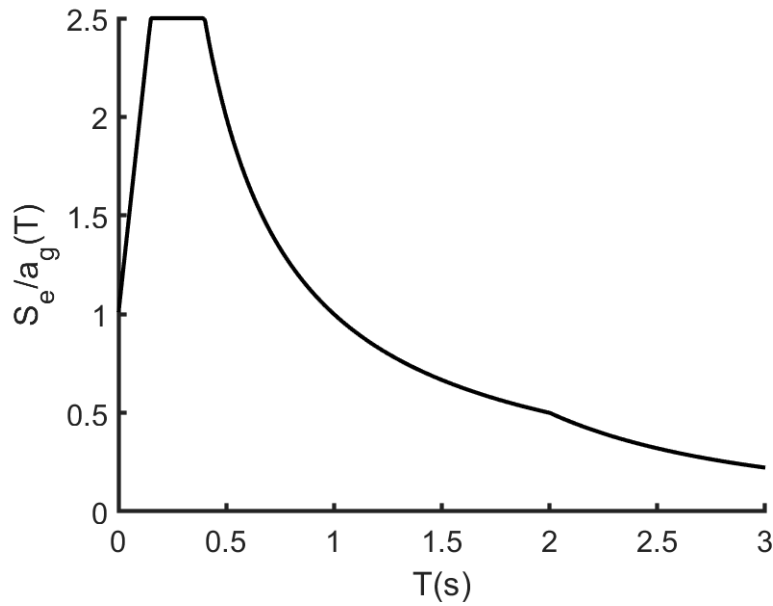


1 vote



## 5. The analytical expression of $S_e$ given in the Eurocode is

9 correct answers  
out of 11 respondents



a function representing the average pseudo-acceleration spectra for different earthquakes occurring in the same region



9 votes

the average frequency response function of a SDOF system subjected to an earthquake



2 votes

A curve giving the ground acceleration for specific earthquake types



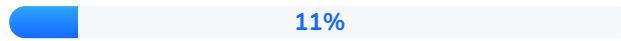
0 votes



## 6. The design spectrum $S_d$ in the eurocode corresponds to

7 correct answers  
out of 9 respondents

The relative displacement spectrum as a function of the region and type of soil



1 vote

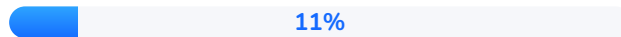


The elastic spectrum  $S_e$  divided by a behavior factor in order to take into account inelastic behavior of the SDOF system



7 votes

The spectrum used by design offices in a CAD software



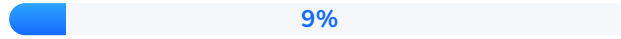
1 vote



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

6 correct answers  
out of 11 respondents

Computing the response of the full model using time-domain simulations



1 vote

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



4 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



9 votes



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

12 respondents

Yes




12 votes

No



0 votes

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

13 respondents

