

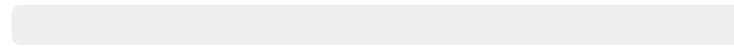
# DOS2019\_Remedial\_Measures

Number of participants: 0

**1**

In order to decrease the vibrations of a footbridge, the following remedial measures can be taken

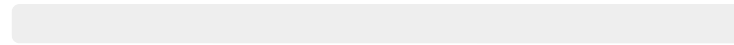
Softening of the bridge



0%

0 votes

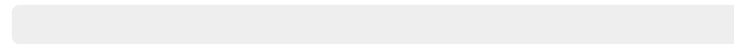
✓ Adding damping



0%

0 votes

Tuning the resonance of the footbridge to about 2Hz



0%

0 votes

2

## A tuned mass damper is

A viscoelastic damping layer added to a system



0%

0 votes

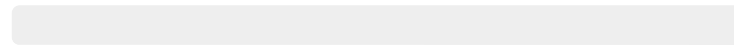
A hydraulic damper used to dissipate energy in a system



0%

0 votes

✓ An auxiliary dynamic system designed to absorb the energy in a narrow frequency band around the natural frequency of the primary system



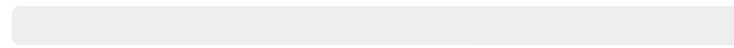
0%

0 votes

3

## Tuning of a TMD consists in

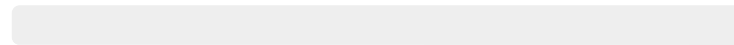
✓ Finding the optimal values of its parameter to minimize the frequency response function of the primary system



0%

0 votes

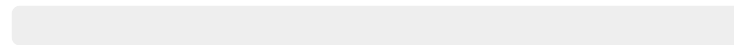
Finding the optimal values of its parameters to minimize the frequency response function of the TMD



0%

0 votes

All of the above



0%

0 votes

4

A pendulum tuned mass damper is designed to damp a resonance in

vertical direction



0%

0 votes

✓ horizontal direction



0%

0 votes

any direction

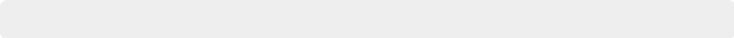
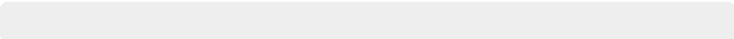
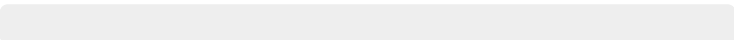


0%

0 votes


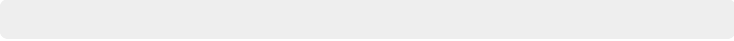
5

For traffic induced vibrations, the following solutions apply

✓ Direct vibration isolation		0%	0 votes
✓ Inverse vibration isolation		0%	0 votes
Decreasing the damping in the system		0%	0 votes

6

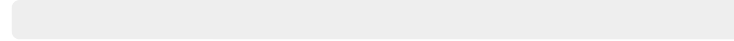
The problem of transmission of vibrations from a tram to the surroundings should be treated as

✓ a direct vibration isolation problem		0%	0 votes
an inverse vibration isolation problem		0%	0 votes

7

## In an isolation system, damping is

a good thing



0%

0 votes

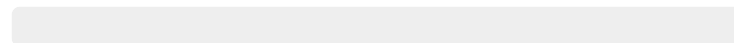
a negative thing



0%

0 votes

✓ it depends on the  
frequency of excitation  
and the natural  
frequency of the system



0%

0 votes



8

For the direct isolation problem, the isolation domain corresponds to

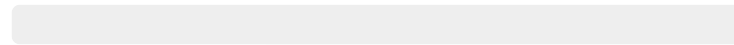
The location where the vibration is reduced in the system



0%

0 votes

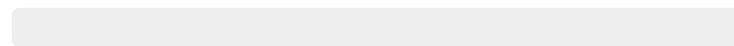
✓ The frequency band in which the force transmitted to the floor is lower than the applied disturbance force



0%

0 votes

The frequency band in which the vibration of the source is reduced



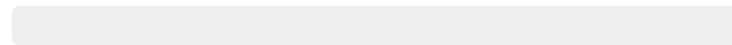
0%

0 votes

9

For the inverse vibration isolation problem, the isolation domain corresponds to

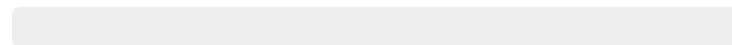
✓ A frequency band in which the sensitive equipment vibrates less than the structure to which it is attached



0%

0 votes

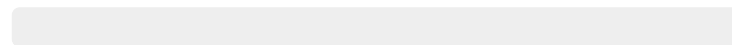
The domain in the system where the vibration is reduced



0%

0 votes

The domain for which thermal insulation is not necessary



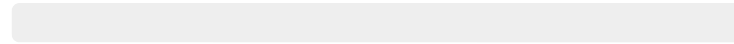
0%

0 votes

10

To achieve isolation, the natural frequency of the mass-spring system should

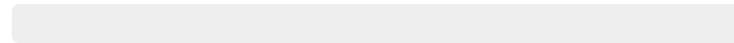
correspond to the frequency range of excitation



0%

0 votes

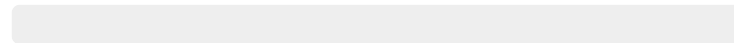
be much higher than the frequency of excitation



0%

0 votes

✓ be much lower than the frequency of excitation



0%

0 votes

11

In order to increase the isolation domain,  
one can

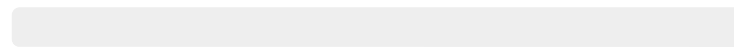
✓ decrease the stiffness of  
the spring in the  
isolation system



0%

0 votes

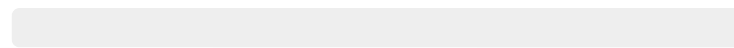
✓ increase the mass of the  
system to isolate



0%

0 votes

increase the damping in  
the isolation system

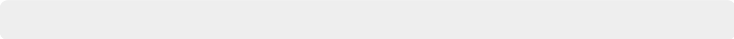
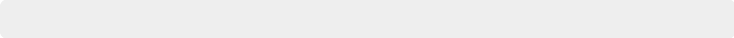
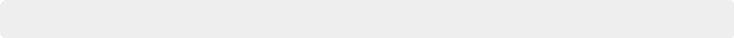


0%

0 votes

12

In order to prevent excessive vibrations due to wind, the following remedial measures can be taken

✓ Adding a TMD		0%	0 votes
Adding vibration isolators in the foundations of the building		0%	0 votes
✓ Changing the shape of the building		0%	0 votes