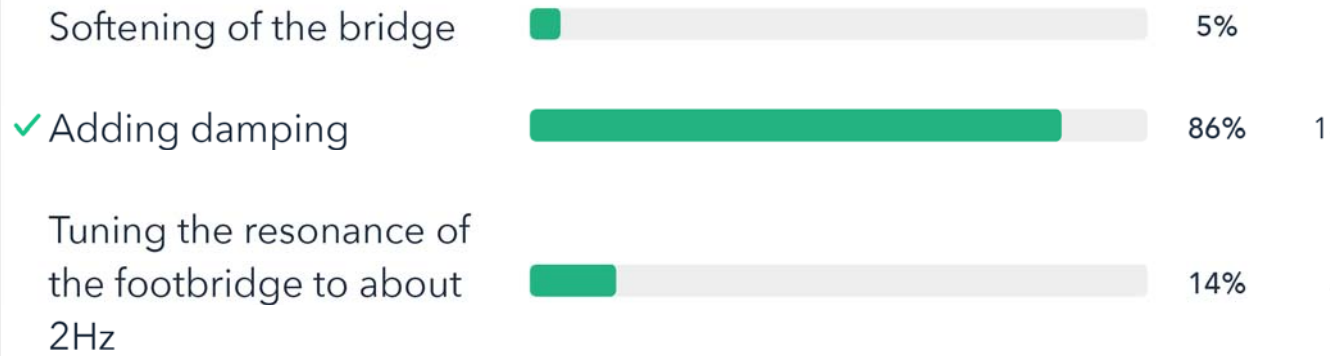


DOS2018_Remedial_Measu

Number of participants: 27

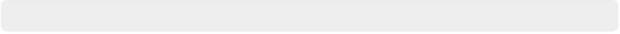
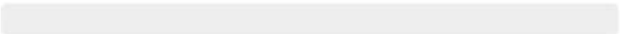

1

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



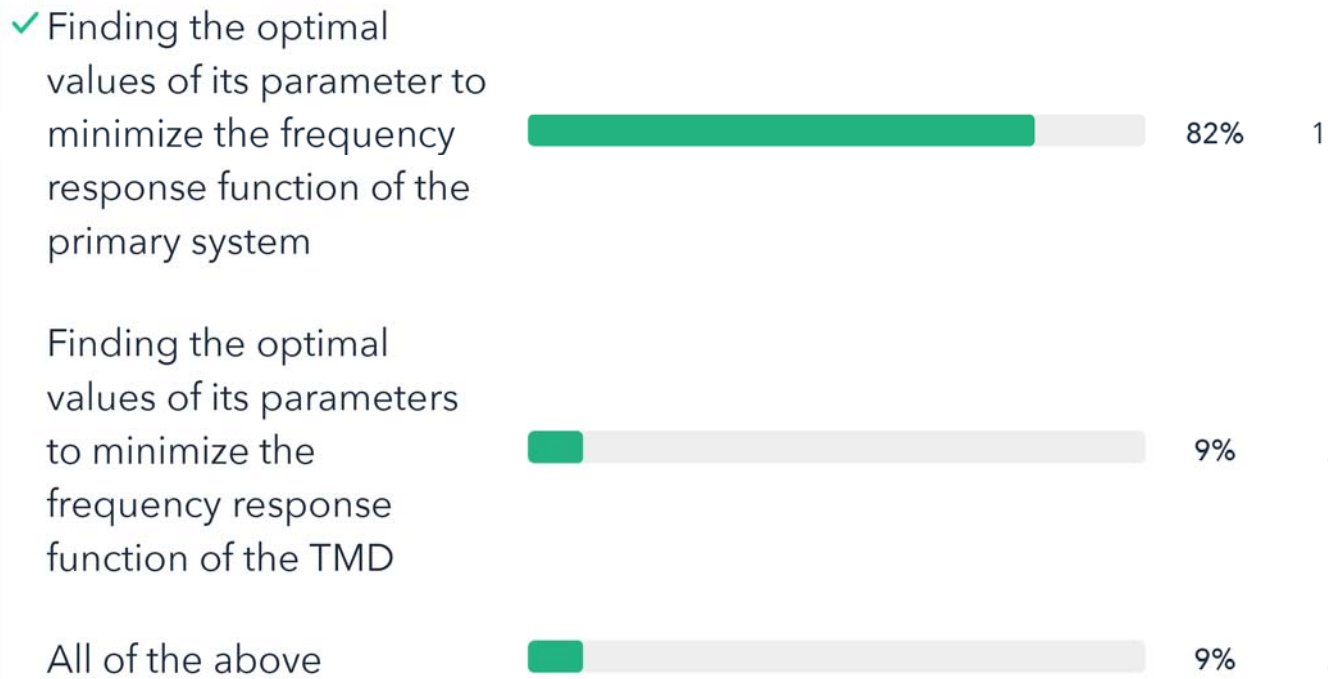
2

A tuned mass damper is

- | | | | |
|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------|---|
| A viscoelastic damping layer added to a system |  | 0% | |
| A hydraulic damper used to dissipate energy in a system |  | 0% | |
| ✓ An auxiliary dynamic system design to absorb the energy in a narrow bandwidth around the natural frequency of the primary system |  | 100% | 2 |

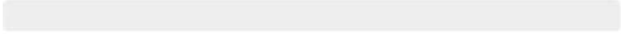
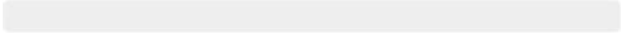
3

Tuning of a TMD consists in



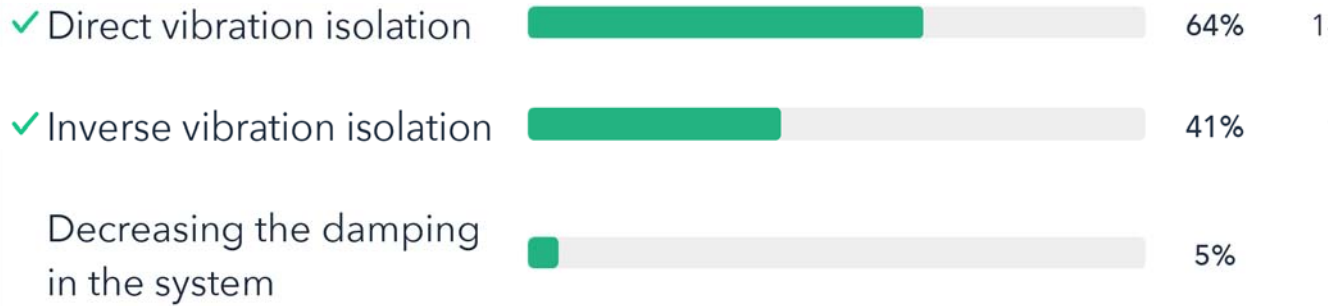
4

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

vertical direction		0%	
✓ horizontal direction		100%	2
any direction		0%	

5

For traffic induced vibrations, the following solutions apply



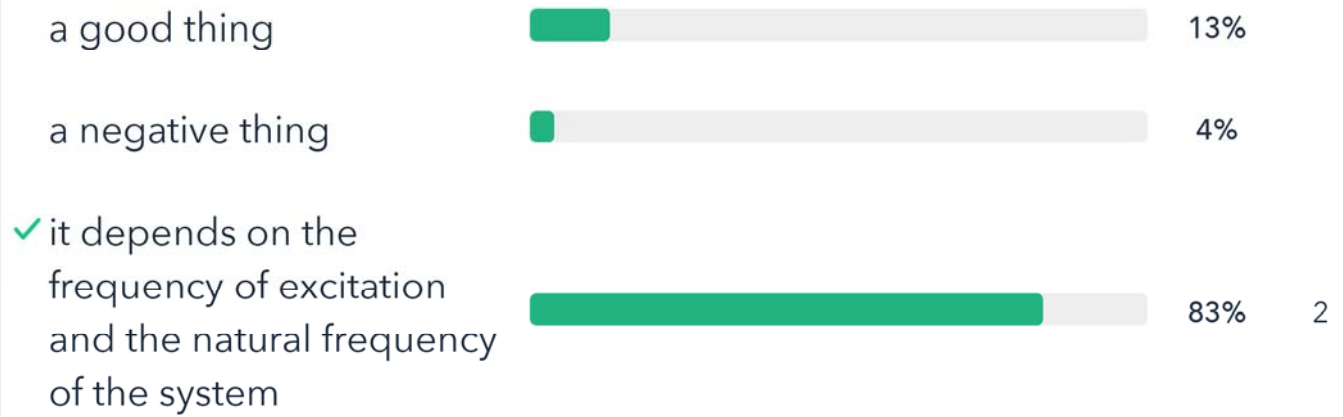
6

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



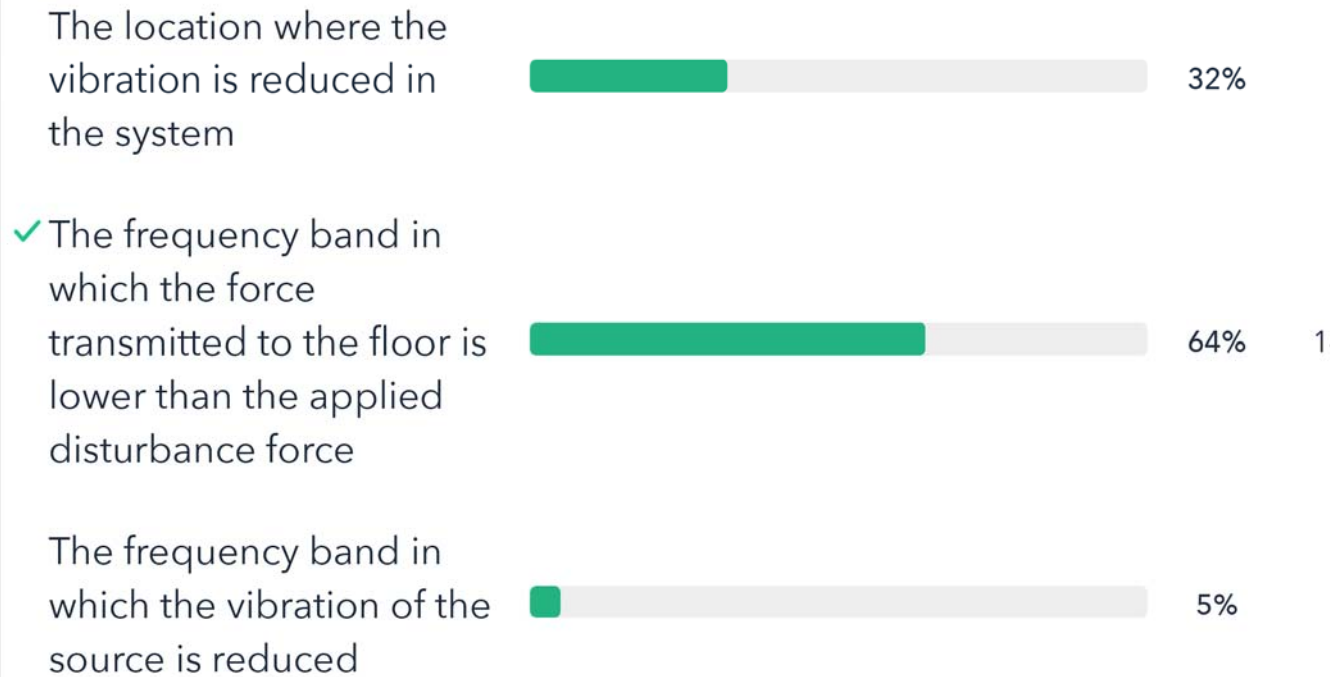
7

In an isolation system, damping is




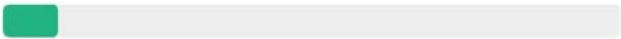
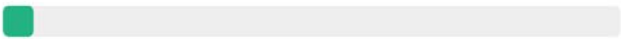
8

For the direct isolation problem, the isolation domain corresponds to



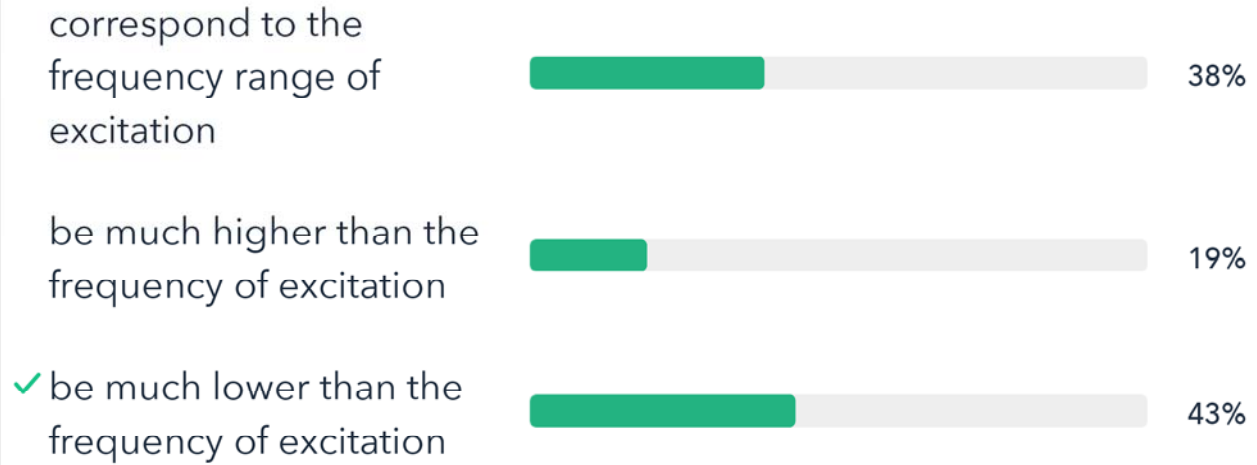
9

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  86% 1
- The domain in the system where the vibration is reduced  9%
- The domain for which thermal insulation is not necessary  5%


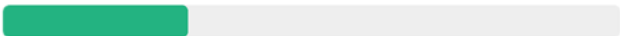
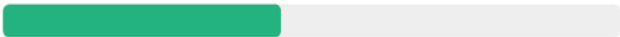
10

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



11

In order to increase the isolation domain,
one can

- ✓ decrease the stiffness of the spring in the isolation system  25%
- ✓ increase the mass of the system to isolate  30%
- increase the damping in the isolation system  45%

12

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

