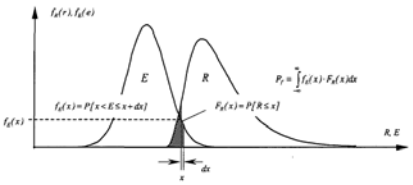
RelaS – Reliability of structures

Project start 06/2006

Project partners

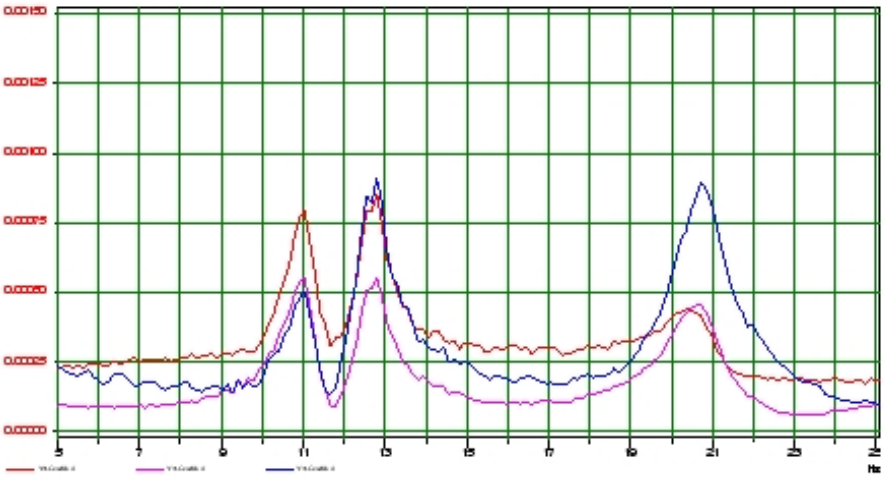


Funded by FFG - ISB Innovative Systeme Bahn

Description

Reliability, strength and durability of railway bridges are variable parameters which decrease during the life cycle. An adequate level of structural reliability is essential for the safe operation of railway systems. Visual and instrumented checks of bridges are therefore performed at regular intervals. Unfortunately these checks are highly subjective and no rules exist to establish a link between measurements and existing design codes. For the present project a number of ideas regarding a safety concept could be developed based on recent advancements in measurement and computer modelling technology on the one hand and the new EUROCODE 1 on the other. Reliability indices will be derived from based on computer models which will be calibrated with measurement data. Using this approach the reliability can be quantified for all times during the life cycle and can be compared to the requirements formulated in the EUROCODE 1. This procedure will facilitate streamlined maintenance and facility management.

Investments in the field of structural and civil engineering are constantly shifting towards maintenance and rehabilitation issues since saturation has almost been reached concerning new developments. The goals can be defined as minimising the risk and the cost of upkeep while guaranteeing the required level of service and quality. The present research project will help to reduce cost and increase quality by combining new technologies into a holistic approach to infrastructure inspection and assessment. The present research project will help to reduce cost and increase quality



Natural frequency band of a railway bridge

Nr.	Freq. [Hz]
1	11,0
2	12,6
3	20,6