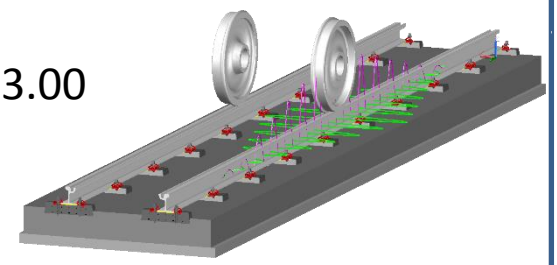
RISEN RESERCH SEMINAR

(Rail Infrastructure Systems Engineering Network)

Thursday 7th September 2017, 12.00-13.00
Lecture Theatre 225 (2nd FL.)
Gisbert Kapp Building (G8), UOB



The Effect of Rail Fastening System Modifications on Tram Traffic Noise and Vibration

Dr. Ivo Haladin, Postdoctoral Researcher at the Department for Transportation Engineering, Faculty of Civil Engineering, University of Zagreb, Croatia

ABSTRACT

Tram system is a backbone of public transportation in the City of Zagreb. In the last decade, its fleet has been renewed by 142 new low-floor trams. Shortly after their introduction, it was observed that they have a negative impact on the exploitation behaviour of tram infrastructure, primarily on the durability of rail fastening systems. Because of that, it was decided to modify existing rail fastening systems to the new track exploitation conditions. When the (re)construction of tram infrastructure is carried out by applying new systems and technologies, it is necessary to take into account their impact on the future propagation of noise and vibration in the environment. This paper gives a short overview of the characteristics of the two newly developed rail fastening systems for Zagreb tram tracks, their application in construction of experimental track section, and performance and comparison of noise and vibration measurements results. Measured data on track vibrations and noise occurring during passage of the tram vehicles is analysed in terms of track decay rates and equivalent noise levels of passing referent vehicle. Vibroacoustic performance of new fastening systems is evaluated and compared to referent fastening system, in order to investigate their ability to absorb vibration energy induced by tram operation and to reduce noise emission.

ABOUT THE SPEAKER

Dr Ivo Haladin, is a postdoc researcher at University of Zagreb. He holds a PhD in Civil Engineering (Railway Infrastructure). He defended his PhD thesis „Application of pass-by method for track decay rate determination on tramway tracks" in 2016. He is doing teaching, research and professional work at the Chair for Railways, Department for Transportation Engineering, Faculty of Civil Engineering, University of Zagreb. He specialises in railway noise and vibration, conducting research on several projects such as RUCONBAR (Rubberized concrete noise barriers), Ballastless concrete railway track ECOTRACK, Noise and vibrations on tramway and railway tracks, Effect of dampers on rail vibrations, COST Action CA15125, "Design for Noise Reducing Materials and Structures – DENORMS" etc. He has 9 years of research and professional experience in collaboration with rail vehicle manufacturers, railway track design and construction companies as well as railway and transit system operators. He published 6 journal papers, 12 book chapters and 30 conference papers. He is a member of International Institute of Acoustics and Vibration and member of organizing committee of the International Conference on Road and Railway infrastructure (CETRA).

This seminar is open to all and refreshments are provided. For catering purpose, please RSVP to Dr Sakdirat Kaewunruen by email at s.kaewunruen@bham.ac.uk

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