

VIBRATION SERVICEABILITY ASSESSMENT OF FOOTBRIDGES

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TUESDAY, 11 DECEMBER 2012

Abstract: Successful vibration serviceability assessment of footbridges relies on reliable estimates of: 1) expected traffic scenarios, 2) dynamic forces induced by pedestrians, 3) dynamic properties of the structure, and 4) human response to vibration. This talk will first address main features of walking locomotion which is a key source of dynamic loading on footbridge structures. Historical development of the models of walking-induced dynamic loading will be presented, starting with simple harmonic models to modern day probabilistic models. Then the gradual improvement in the design guidelines for vibration serviceability evaluation of footbridges that reflects the research developments over the last decade will be commented, and critically evaluated. Finally, the current challenges in modelling pedestrian interaction with vibrating footbridges as well as modelling vandal loading will be addressed briefly through presenting the research developments under way at the University of Warwick.

The Speaker: Dr Stana Živanović completed her PhD in the field of vibration serviceability of civil engineering structures at University of Sheffield. She has worked as a postdoctoral researcher with Professors Brownjohn and Pavic in developing software for vibration assessment of structures. She has conducted numerous vibration performance tests on problem structures such as footbridges, floors and stadia across the UK and abroad. Since 2009 she is Assistant Professor at the School of Engineering at the University of Warwick where she is developing the Humans and Structures Laboratory for studying interactions between people and the built environment.

Date & Time: 11 Dec. 2012,
Reception 19:00, Lecture 19:30
Venue: Rm 259, DIT Bolton St.

