



HRVATSKO DRUŠTVO ZA MEHANIKU
(Croatian Society of Mechanics)
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pozivaju vas na predavanje s naslovom

Composite beam-columns with compliant interfaces

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Predavanje će se održati u petak 27. lipnja 2014. u s početkom u 14:00 sati
u predavaonici G-206 na Građevinskome fakultetu Sveučilišta u Rijeci

Podružnica HDM u Rijeci

Gordan Jelenić

Composite beam-columns with compliant interfaces

Abstract

In recent years, the applications of composite layered systems have increased tremendously in automotive, aerospace, mechanical, and structural engineering industries. The main advantages of composite systems over the conventional structures are their high strength-to-weight and stiffness-to-weight ratios. However, their mechanical behavior could be considerably affected by the type of the connection between the constituents. For instance, in some widely used composite structures in civil engineering, such as nailed, glued or bolted layered wood systems, wood-concrete or steel-concrete systems, an absolutely stiff connection between the layers can hardly be realized in practice. As a result an interlayer slip and uplift between the layers could develop, which can, if it have a sufficient magnitude, significantly affect the mechanical behavior of the composite system. The presentation will thus be related to the analysis of the mechanical behavior of layered composite beam-columns with compliant interfaces. The emphasis will be given specially to the two-layer composite beams and columns subjected to static loads and fire as well. The elastic and inelastic bending and buckling behavior of these structures will be investigated in detail. Analytical and numerical results will also be presented and discussed.

Lecturer

Simon Schnabl graduated in 2002 from Faculty of Civil and Geodetic Engineering at the University of Ljubljana. He received his Ph.D. in 2007 at the same institution after defending the thesis entitled “Mechanical and fire analysis of composite structures”. After that he worked as a postdoctoral researcher at the Chair of Mechanics, Faculty of Civil and Geodetic Engineering, University of Ljubljana, where in 2009 he became Assistant Professor.

Recently, his work has been mainly related to stability of composite structures with compliant interfaces. He is an author or a co-author of several papers in the top-tier international journals in Civil Engineering and Mechanics. Since 2010, he has been a member of a Technical Stability Committee of Engineering Mechanics Institute (EMI) of the American Society of Civil Engineers (ASCE).