



**MULTIDISCIPLINARY ANALYSIS, INVERSE DESIGN, ROBUST OPTIMIZATION AND CONTROL  
(MAIDROC) LABORATORY**

**Department of Mechanical and Materials Engineering  
Presents an Invited Lecture on**

## **ROAD SAFETY BARRIERS AND THEIR CRASHWORTHINESS**

**Matej Vesenjok, Assoc. Prof.**

Faculty of Mechanical Engineering, University of Maribor, Slovenia

**Date: November 24, 2015 (TUESDAY)**

**Time: 3:30 – 4:30 p.m.**

**Room: EC2300 (large conference room)**

One of the major tasks in road transportation is to assure an adequate safety level for road users. To maintain and improve road safety, it is often necessary to install certain devices on the road that are intended to restrain vehicles and pedestrians from entering dangerous areas. The road safety barriers, designed according to the European standard EN 1317, provide certain levels of vehicle containment, properly redirect errant vehicles back on the road and provide guidance for pedestrians and other road users. The presentation focuses on development of full-scale computational models for simulations of crash tests mandated by the EN 1317. The impact severity and stiffness of safety barriers was determined with computational simulations using the explicit dynamic nonlinear finite element code LS-DYNA. Additionally, full-scale crash tests were performed and the measured experimental data were compared with the computational results. From the result a very good agreement between the experimental and computational tests can be observed, which validates and justifies the use of computational simulations for further development of road safety barriers.

### **Biosketch of the Invited Lecturer:**

Dr. Matej Vesenjok is an Associate Professor of the Faculty of Mechanical Engineering at University of Maribor, Slovenia. He received his B.Sc. degree in Mechanical Engineering at the University of Maribor in 2001 and obtained his Ph.D. degree at the same university in 2006. From 2012 he was also a Visiting Professor at the Kumamoto University, Japan and from 2013 a Visiting professor at the Okinawa National College of Technology, Japan. His research interests focus on porous/cellular materials, mechanical

properties of advanced materials, computational mechanics, crashworthiness and fluid-structure interaction. He has been awarded with numerous scholarships and fellowships and has gained professional experience at several universities and institutions worldwide. He has published more than 400 publications.

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