Professor Evgeny Barkanov

See:
http://www.ims.rtu.lv/doc/CV-ENG-E_Barkanov.pdf
http://www.researchgate.net/profile/Barkanov_Evgeny
http://academic.research.microsoft.com/Author/54934382/evgeny-barkanov

Faculty of Civil Engineering
Institute of Materials and Structures
Riga Technical University

Education:
1986, Dipl. Ing, Riga Polytechnical Institute, Robots and manipulators
1993, Dr.Sc.Ing, Riga Technical University, Mechanics of deformable solids
Thesis: "Methods and algorithms elaboration for dynamic analysis of thin-walled layered structures with damping"; Supervisor Prof. R. Rikards

Professional Career:
1993-2002, Researcher, Riga Technical University, CAD Center
2002-2005, Senior Researcher, Riga Technical University, Institute of Materials and Structures
2005-2008, Associate Professor, Riga Technical University, Institute of Materials and Structures
2008 – present, Professor, Riga Technical University, Institute of Materials and Structures

Research interests:
Mechanics of composite materials, computational mechanics, experimental mechanics, dynamics of

structures, vibration damping, structural control, sandwich and laminated composites, lightweight design, numerical methods, finite element method, inverse problems, optimisation.

Selected publications:

---------Book: Evgeny Barkanov, Introduction to the finite element method, Institute of Materials and Structures, Faculty of Civil Engineering, Riga Technical University, Riga, 2001, no publisher given.

E. Barkanov, W. Hufenbach, L. Kroll, "Transient response analysis of systems with different damping models", Computer Methods in Applied Mechanics and Engineering, vol. 192, no. 1, pp. 33-46, 2003

Barkanov E, Gluhih S, Chate A, Almeida F, Bowering M C and Watson G. Optimal weight design of laminated composite panels with T-stiffeners under buckling loads. Proc 6th International Symposium on Advanced Composite Technologies: Composites and Applications for the New Millenium, Corfu, Greece, 10 P., on CD ROM, 2007.

Barkanov E, Gluhih S, Ozolins O, Eglitis E, Almeida F, Bowering M C and Watson G. Optimal design of composite lateral wing upper covers based on non-linear buckling analysis. Proc 9th International Conference on Computational Structures Technology, Athens, Greece, paper 295, 2008.

E. Barkanov (1), S. Gluhih (1), O. Ozolins (1), E. Eglitis (1), F. Almeida (2), M. C. Bowering (2) and G. Watson (2)
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(2) AIRBUS UK, New Filton House, Filton, Bristol BS99 7AR, UK
"Optimal weight design of laminated composite panels with different stiffeners under buckling loads", ICAS 2010, 27th International Congress Of The Aeronautical Sciences, 2010

E. Barkanov, D. Beschetnikov, G. Lvov, "Effect of Technological Tensioning on the Efficiency of Reinforcement of Pipelines with Composite Bands", Mechanics of Composite Materials, 01/2015; 50(6).
DOI: 10.1007/s11029-015-9461-3
ABSTRACT A mathematical model for the contact interaction of a cylindrical pipe with a composite band during its repair is constructed. A system of governing equations of the contact problem is formulated by using the Timoshenko theory of shells. An analysis of possible solutions is carried out for various combinations of geometric and elastic properties of shells. The possibility of pretension of a prepreg in order to improve the efficiency of repair is considered. The numerical results obtained allow one to establish the desired level of pretension for various repair situations.

E. Barkanov, M. Wesolowski, W. Hufenbach, M. Dannemann, "An effectiveness improvement of the inverse technique based on vibration tests", Computers & Structures, 01/2015; 146.
DOI: 10.1016/j.compstruc.2014.10.006
ABSTRACT A new procedure has been developed to minimise the influence of the sample imperfections on the identified material parameters by eliminating from the objective function those modes that are mostly affected by the model errors so that eventually no modifications of the numerical model are required. The model errors in the present study are defined as deviations of a test sample from the assumptions made in the numerical model, namely, assumptions about lamination angle, plate flatness and uniform thickness. To improve an accuracy of the error functional coming from the physical tests, an influence of measurement errors on the modal parameters has been investigated additionally. The proposed practical solution makes the results of

inverse problems more accurate and reliable and the identification process more effective. This new methodology has been successfully applied for the non-destructive material properties characterisation of carbon/epoxy prepreg panels.