



**Professor Matej Vesenjajk**

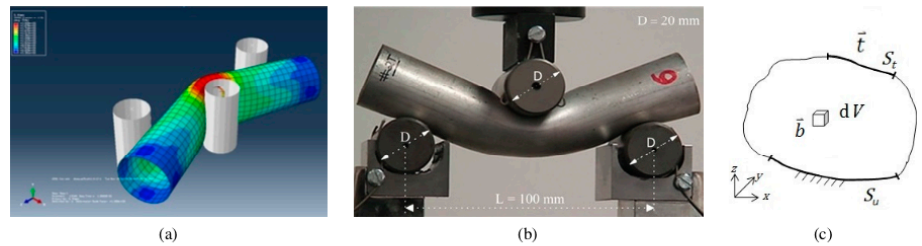


Figure 1: Inverse problems framework: a) simulation, b) experimental environment and c) physical model.

From: C.C. Pacheco, G.S. Dulikravich, M. Vesenjajk, M. Borovinsek, I.M.A. Duarte, R. Jha, S.R. Reddy, H.R.B. Orlande and M.J. Colaco, "Inverse parameter identification in solid mechanics using Bayesian statistics, response surfaces and minimization", *Technische Meckanik*, Vol. 36, Nos. 1-2, pp 120-131, 2016

See:

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### Selected Publications:

- Matej Vesenjajk, Andreas Oechsner, Matiej Hrlbersek and Zoran Ren, "Behaviour of cellular structures with fluid fillers under impact loading", *Journal of Multiphysics*, Vol. 1, No. 1, 2007
- M. Vesenjajk, Z. Ren and K. Schweizerhof, "Computational simulation of aluminum cellular structures", Conference that is not identified in the pdf file, January 2008
- M. Borovinsek, M. Vesenjajk, M. Joze and Z. Ren, "Computational reconstruction of scanned aluminum foams for virtual testing", *Journal of the Serbian Society for Computational Mechanics*, Vol. 2, No. 2, pp 16-28, 2008
- Matej Vesenjajk, Thomas Fiedler, Andreas Oechsner and Zoran Ren, "Numerical analysis of metallic hollow sphere structures", *LS-DYNA Anwenderforum*, Bamberg, 2008
- Vesenjajk, M., Fiedler, T., Ren, Z., Öchsner, A.: Dynamic behaviour of metallic hollow sphere structures. In: Öchsner, A., Augustin, C. (eds.) *Multifunctional Metallic Hollow Sphere Structures*, pp. 137–158. Springer, Berlin (2009)
- S. Lochnert, L. Krstulovic-Opara, M. Vesenjajk and D. Mueller-Hoepe, "Homogenization principle based multi-scale modeling of cellular structures", *Journal of the Serbian Society for Computational Mechanics*, Vol. 4, No. 2, pp 97-109, 2010
- Matej Vesenjajk, Matej Borovinsek, Zoran Ren, Seiichi Irie and Shigeru Itoh, "Behavior of metallic foam under shock wave loading", *Metals*, Vol. 2, pp 258-264, 2012
- Isabel Duarte, Matej Vesenjajk and Lovre Krstulovic-Opara, "Variation of quasi-static and dynamic compressive properties in single aluminium-alloy foam block", *Procedia Materials Science*, Vol. 4, pp 151-156, 2014

Isabel Duarte, Matej Vesenjak and Lovre Krstulovic-Opara, "Dynamic and quasi-static bending behaviour of thin-walled aluminium tubes filled with aluminium foam", *Composite Structures*, Vol. 109, pp 48-56, March 2014

Isabel Duarte, Lovre Krstulovic-Opara and Matej Vesenjak, "Characterisation of aluminium alloy tubes filled with aluminium alloy integral-skin foam under axial compressive loads", *Composite Structures*, Vol. 121, pp 154-162, March 2015

Isabel Duarte, Matej Vesenjak, Lovre Krstulovic-Opara and Zoran Ren, "Static and dynamic axial crush performance of in-situ foam-filled tubes", *Composite Structures*, Vol. 124, pp 128-139, June 2015

Isabel Duarte, Matej Vesenjak, Lovre Krstulovic-Opara and Zoran Ren, "Compressive performance evaluation of APM (Advanced Pore Morphology) foam filled tubes", *Composite Structures*, Vol. 134, pp 409-420, December 2015

I. Duarte, M. Vesenjak, I. Krstulovic-Opara, I. Anzel, J. Ferreira, Manufacturing and bending behaviour of in situ foam-filled aluminium alloy beams, *Mater. Des.*, 66 (2015), pp. 532-544

Cesar C. Pacheco, Matej Vesenjak, Matej Borovinsek, Isabel Duarte, Rajesh Jha, Solail R. Reddy, George S. Dulikravich, Helcio R.B. Orlande and Marcelo J. Colaco, "Identification of material properties through a Markov chain Monte Carlo technique and a response surface approximation", 23rd ABCM International Congress of Mechanical Engineering, December 6-11, Rio de Janeiro, Brazil, 2015

C.C. Pacheco, G.S. Dulikravich, M. Vesenjak, M. Borovinsek, I.M.A Duarte, R. Jha, S.R. Reddy, H.R.B. Orlande and M.J. Colaco, "Inverse parameter identification in solid mechanics using Bayesian statistics, response surfaces and minimization", *Technische Meckanik*, Vol. 36, Nos. 1-2, pp 120-131, 2016

Isabel Duarte, Matej Vesenjak and Lovre Krstulovic-Opara, "Compressive behaviour of unconstrained and constrained integral-skin closed-cell aluminium foam", *Composite Structures*, Vol. 154, pp 231-238, October 2016

Nejc Novak, Matej Vesenjak and Zoran Ren, "Auxetic cellular materials – A review", *Journal of Mechanical Engineering*, Vol. 62, No $\geq$  9, pp 485-498, 2016

Dirk Lehmhus, Matej Vesenjak, Sven de Schampheleire and Thomas Fiedler, "From stochastic foam to designed structure: Balancing cost and performance of cellular metals", *Materials*, Vol. 10, 922, 2017

N. Novak, M. Vesenjak, and Z. Ren, "Computational simulation and optimization of functionally graded auxetic structures made from inverted tetrapods," *Physica Status Solidi (b)*, vol. 254, no. 12, p. 1600753, 2017

Isabel Duarte, Lovre Krstulovic-Opara and Matej Vesenjak, "Axial crush behaviour of the aluminium alloy in-situ foam filled tubes with very low wall thickness", *Composite Structures*, Vol. 192 pp 184-192, May 2018

Nejc Novak, Luka Starcevic, Matej Vesenjak and Zoran Ren, "Blast response study of the sandwich composite panels with 3D chiral auxetic core", *Composite Structures*, Vol. 210, pp 167-178, 15 February 2019

Isabel Duarte, Lovre Krstulovic-Opara, Joao Dias-de-Oliveira and Matej Vesenjak, "Axial crush performance of polymer-aluminium alloy hybrid foam filled tubes", *Thin-Walled Structures*, Vol. 138, pp 124-136, May 2019

Susana C. Pinto, Paula A.A.P. Marques, Matej Vesenjak, Romeu Vicente, Luis Godinho, Lovre Krstulovic-Opara and Isabel Duarte, "Mechanical, thermal and acoustic properties of aluminum foams impregnated with epoxy/graphene oxide nanocomposites", *Materials*, Vol. 9, 1214, 2019

Matej Borovinsek, Matej Vesenjak, Yoshikazu Higa, Ken Shimojima and Zoran Ren, "Characterization of geometrical changes of spherical advanced pore morphology (APM) foam elements during compressive deformation", *Materials*, Vol. 12, 1088, 2019

Nejc Novak, Matej Vesenjak, Isabel Duarte, Shigeru Tanaka, Kazuyuki Hokamoto, Lovre Krstulovic-Opara, Baoqiao Guo, Pengwan Chen and Zoran Ren, "Compressive behaviour of closed-cell aluminum foam at different strain rates", *Materials*, Vol. 12, 4108, 2019

Matej Vesenjak, Isabel Duarte, Joachim Baumeister, Hartmut Göhler, Lovre Krstulovic-Opara and Zoran Ren, "Bending performance evaluation of aluminium alloy tubes filled with different cellular metal cores", *Composite Structures*, Vol. 234, Article 111748, 15 February 2020