



Professor Steffen Marburg

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Vibroacoustics of Vehicles and Machines, Department of Mechanical Engineering
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Biography and Research Interests:

The research interests of Steffen Marburg encompass the development and application of numerical methods for vibroacoustics and aeroacoustics, the experimentally based virtual prototyping of complex models in combination with parameter identification, the consideration and identification of parameter variations and structural acoustic optimization. The applications are manifold and include automotive parts, ships, electric tools and musical instruments. Marburg graduated from TU Dresden where he was awarded a doctoral degree in 1998. Subsequently he stayed on at TU Dresden and in 2004 became a junior professor for Structural Acoustic Optimization/Boundary Element Methods. In 2010 he moved to the University of the Federal Armed Forces in Munich and became a full professor for Technical Dynamics. In 2015 he was awarded the new professorship for Vibroacoustics at TUM. Marburg is associate editor of the peer-reviewed journal *Acta Acustica* united with *Acustica*, editor of the *Journal of Computational Acoustics* and chair of the TC Computational Acoustics of the European Acoustics Association.

Selected Publications:

- S. Marburg, "Efficient optimization of a noise transfer function by modification of a shell structure geometry – Part I: Theory", *Structural and Multidisciplinary Optimization*, Vol. 24, pp 51-59, 2002
- S. Marburg and H.-J. Hardtke, "Efficient optimization of a noise transfer function by modification of a shell structure geometry – Part II: Application to a vehicle dashboard", *Structural and Multidisciplinary Optimization*, Vol. 24, pp 60-71, 2002
- S. Marburg, H.-J. Beer, J. Gier, H.-J. Hardtke, R. Rennert, F. Perret: Experimental verification of structural-acoustic modeling and design optimization. *Journal of Sound and Vibration* 252 (2002) 591–615

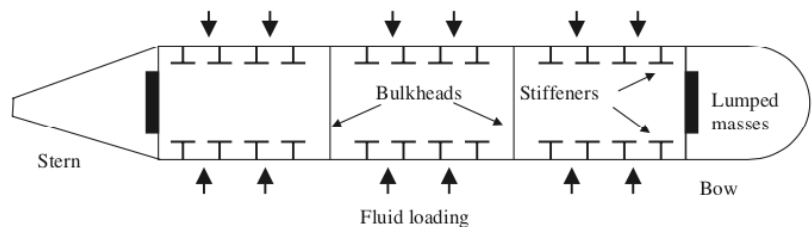


Fig. 1. Schematic view of the submarine model.

From: Sascha Merz, Sebastian Oberst, Paul G. Dylejko, Nicole J. Kessissoglou, Yan K. Tso and Steffen Marburg, "Development of coupled FE/BE models to investigate the structural and acoustic responses of a submerged vessel", *Journal of Computational Acoustics*, Vol. 15, No. 1, pp 23-47, 2007

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Steffen Marburg and Robert Anderssohn, “Fluid structure interaction and admittance boundary conditions: Setup of an analytical example”, *Journal of Computational Acoustics*, Vol. 19, No. 1, pp 63-74, 2011

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K. Sepahvand, S. Marburg and H.-J. Hardtke, “Stochastic free vibration of orthotropic plates using generalized polynomial chaos expansion”, *Journal of Sound and Vibration*, Vol. 331, No. 1, pp 167-179, January 2012

Goel, M. D., Matsagar, V. A., Gupta, A. K., & Marburg, S. (2012). An abridged review of blast wave parameters. *Defence Science Journal*, 62(5), 300–306.

M. D. Goel, V. A. Matsagar, S. Marburg, and A. K. Gupta, “Comparative performance of stiffened sandwich foam panels under impulsive loading,” *Journal of Performance of Constructed Facilities*, vol. 27, no. 5, pp. 540–549, 2012.

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P. Langer, K. Sepahvand and S. Marburg, “Uncertainty quantification in numerical and experimental models of structural vibration problems”, *Inter.noise 2015*, 9-12 August 2015, San Francisco, California USA

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Theo Kiesel, Patrick Langer and Steffen Marburg, “Numerical study on the effect of gravity on modal analysis of thin-walled structures”, *Acta Acustica united with Acustica*, Vol. 105, No. 3, pp 545-554, May/June 2019

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