



**Professor Brian R. Mace** From: R. Sarban, R.W. Jones, B.R. Mace and E. Rustighi, "A tubular dielectric elastomer actuator: Fabrication, characterization and active vibration isolation", *Mechanical Systems and Signal Processing*, Vol. 25, pp 2879-2891, 2011

See:

<https://unidirectory.auckland.ac.nz/profile/b-mace>

[https://www.researchgate.net/profile/Brian\\_Mace2](https://www.researchgate.net/profile/Brian_Mace2)

<https://scholar.google.co.nz/citations?user=K-sLaPUAAAJ&hl=en>

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### Research Interests:

Structural dynamics; Vibrations; Acoustics; Active noise; Vibration control; Smart structures

### Selected Publications:

- Mace, B.R., Sound radiation from a plate reinforced by two sets of parallel stiffeners. *Journal of Sound and Vibration*, 1980. 71(3): p. 435-441
- B. R. Mace, "Periodically stiffened fluid-loaded plates, I: response to convected harmonic pressure and free wave propagation," *Journal of Sound and Vibration*, vol. 73, no. 4, pp. 473-486, 1980.
- B. R. Mace, "Periodically stiffened fluid-loaded plates, II: response to line and point forces," *Journal of Sound and Vibration*, vol. 73, no. 4, pp. 487-504, 1980.
- B. Mace, Sound radiation from fluid loaded orthogonally stiffened plates, *J. Sound Vib.*, 79 (3) (1981), pp. 439-452
- B. R. Mace, "Wave reflection and transmission in beams," *Journal of Sound and Vibration*, vol. 97, no. 2, pp. 237-246, 1984.
- B.R. Mace and R.W. Jones, "Feedback control of flexural waves in beams", *Journal of Structural Control*, Vol.3, Nos. 1-2, June 1996
- B. R. Mace, "The vibration of plates on two-dimensionally periodic point supports," *Journal of Sound and Vibration*, vol. 192, no. 3, pp. 629-643, 1996.
- E. C. N. Wester and B. R. Mace, Statistical energy analysis of two edge-coupled rectangular plates: Ensemble averages, *J. Sound Vib.* 193 (4) (1996) 793-822.
- N. R. Harland, B. R. Mace, and R. W. Jones, "Wave propagation, reflection and transmission in tunable fluid-filled beams," *Journal of Sound and Vibration*, vol. 241, no. 5, pp. 735-754, 2001.
- C. Mei and B. R. Mace, "Wave reflection and transmission in Timoshenko beams and wave analysis of Timoshenko beam structures," *Journal of Sound and Acoustics*, vol. 127, pp. 382-394, 2004.
- L. Ji, B. R. Mace and R. J. Pinnington, A hybrid mode/Fourier-transform approach for estimating the vibrations of beam-stiffened plate systems, *J. Sound Vib.* 274 (3) (2004) 547-565.

B.R. Mace, D. Duhamel, M.J. Brennan, L. Hinke, Finite element prediction of wave motion in structural waveguides, *J. Acoust. Soc. Am.*, 117 (2005), pp. 2835-2843

Duhamel D, Mace BR, Brennan MJ. Finite element analysis of the vibrations of waveguides and periodic structures. *J. Sound Vib.* 2006;294:205–220.

C.M.A. Vasques, B.R. Mace, P. Gardonio and J. Dias Rodrigues, “Arbitrary active constrained layer damping treatments on beams: Finite element modeling and experimental validation”, *Computers and Structures*, Vol. 84, pp 1384-1401, 2006

Elisabetta Manconi and Brian R. Mace, “Modelling wave propagation in cylinders using a wave/finite element technique”, 19th International Congress on Acoustics, Madrid, Spain, 2-7 September 2007

Lee, S. K., Mace, B. R. and Brennan, M. J. [2007] “Wave propagation, reflection and transmission in non-uniform one-dimensional waveguides,” *Journal of Sound and Vibration* 304, 31–49.

S.-K. Lee, B. R. Mace, and M. J. Brennan, “Wave propagation, reflection and transmission in curved beams,” *Journal of Sound and Vibration*, vol. 306, no. 3-5, pp. 636–656, 2007.

F. Dohnal and B.R. Mace, “Amplification of damping of a cantilever beam by parametric excitation”, 9th International Conference on Motion and Vibration Control (MOVIC), September 15-18, 2008, Munich, Germany

Seung Kyu Lee, Brian Mace and Michael Brennan, “In-plane free vibration of curved beams”, 15th International Congress on Sound and Vibration, Daejeon, Korea, 6-10 July 2008

E. Manconi, B.R. Mace, Modelling wave propagation in two dimensional structures using finite element analysis, *J. Sound Vib.*, 318 (45) (2008), pp. 884-902

Y. Waki, B. Mace, M. Brennan, Numerical issues concerning the wave and finite element method for free and forced vibrations of waveguides, *J. Sound Vib.*, 327 (1–2) (2009), pp. 92-108

E. Manconi, B.R. Mace, Wave characterization of cylindrical and curved panels using a finite element method, *J. Acoust. Soc. Am.*, 125 (1) (2009), pp. 154-163

Yong Xiao, Brian R. Mace, Jihong Wen and Xisen Wen, “Beams with periodically attached vibration absorbers: Free wave propagation, forced vibration and sound radiation”, The 17th International Congress on Sound and Vibration (ICSV 17), Cairo, Egypt, 18-22 July, 2010

Ramlan, R., Brennan, M.J., Mace, B.R., Kovacic, I.: Potential benefits of a non-linear stiffness in an energy harvesting device. *Nonlinear Dyn.* 59(4), 545–558 (2010)

E. Manconi, B.R. Mace, Estimation of the loss factor of viscoelastic laminated panels from finite element analysis, *J. Sound Vib.*, 329 (19) (2010), pp. 3928-3939

R. Sarban, R.W. Jones, B.R. Mace and E. Rustighi, “A tubular dielectric elastomer actuator: Fabrication, characterization and active vibration isolation”, *Mechanical Systems and Signal Processing*, Vol. 25, pp 2879-2891, 2011

S.J. Elliott, Guangjian Ni, B. Lineton and B.R. Mace, “Decomposition of the cochlear response using wave finite elements”, ICSV19, Vilnius, Lithuania, July 8-12, 2012

Ramlan R, Brennan M J, Mace B R and Burrow S G 2012 On the performance of a dual-mode non-linear vibration energy harvesting device *J. Intell. Mater. Syst. Struct.* 23 1423–1432

Guangjian Ni, Stephen J. Elliott and Brian R. Mace, “Waves in a three-dimensional model of the cochlea”, 11th International Conference (RASD 2013), Pisa, Italy, 1-3 July 2013

Jamil M. Renno, Elisabetta Manconi and Brian R. Mace, “A finite element method for modeling waves in laminated structures”, *Advances in Structural Engineering*, Vol. 16, No. 1, 2013

G. Petrone, S. Rao, S. De Rosa, B.R. Mace, F. Franco and D. Bhattacharyya, “Behaviour of fibre-reinforced honeycomb core under low velocity impact loading”, *Composite Structures*, Vol. 100, pp 356-362, June 2013

E. Manconi, B.R. Mace, R. Garziera, The loss-factor of pre-stressed laminated curved panels and cylinders using a wave and finite element method, *J. Sound Vib.*, 332 (7) (2013), pp. 1704-1711

G. Petrone, V. D’Alessandro, F. Franco, B. Mace, S. De Rosa, “Modal characterisation of recyclable foam sandwich panels”, *Compos Struct*, 113 (2014), pp. 362-368

J.M. Renno, B.R. Mace, Vibration modelling of structural networks using a hybrid finite element/wave and finite element approach, *Wave Motion*, 51 (4) (2014), pp. 566-580

J.M. Renno, B.R. Mace, Calculating the forced response of cylinders and cylindrical shells using the wave and finite element method, *J. Sound Vib.*, 333 (21) (2014), pp. 5340-5355

Yi Yang, B.R. Mace and M. Kingan, “Prediction of noise transmission through infinite panels using a wave and finite element method”, *Journal of Physics: Conference Series* 744, 012235, 2016

M. Kingan, Y. Yang, B. Mace, Application of the wave and finite element method to calculate sound transmission through cylindrical structures, *J. Phys.: Conf. Series*, 744 (1) (2016) 012240  
M.Z. Rahman, B.R. Mace and K. Jayaraman, "Vibration damping of natural fibre-reinforced composite materials", 17th European Conference on Composite Materials (ECCM17), Munich, Germany, 26-30 June 2016  
Y. Yang, B. Mace, M. Kingan, Prediction of sound transmission through, and radiation from, panels using a wave and finite element method, *J. Acoust. Soc. Am.*, 141 (4) (2017), pp. 2452-2460  
Yi Yang, Brian R. Mace and Michael J. Kingan, "A wave and finite element based homogenised model for predicting sound transmission through honeycomb panels", *Journal of Sound and Vibration*, Vol. 463, Article 114963, 22 December 2019