



Prof. Zhangming Wu

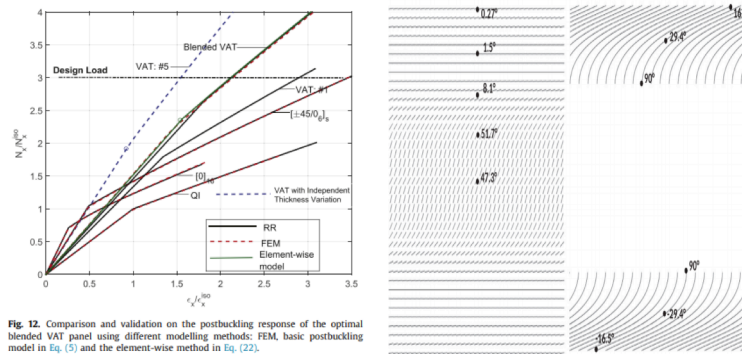


Fig. 12. Comparison and validation on the postbuckling response of the optimal blended VAT panel using different modelling methods: FEM, basic postbuckling model in Eq. (5) and the element-wise method in Eq. (22).

A ‘Buckle-Free’ Panel Design using VAT Laminates - From: “Optimization of postbuckling behaviour of variable thickness composite panels with variable angle tows: Towards ‘Buckle-Free’ design concept”, Z Wu, G Raju, PM Weaver, International Journal of Solids and Structures 132, 66-79

See:

<https://scholar.google.co.uk/citations?user=AplYTyMAAAAJ&hl=en>
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Biography:

Zhangming Wu is a Lecturer in Advanced Computational Mechanics Group, Cardiff School of Engineering. He was working at ACCIS, University of Bristol (PDRA, 2010-2014), University of Strathclyde (Lecturer, 2014-2016), Tongji University (Professor, 2016).

Zhangming Wu’s research focused on the development of efficient modelling and optimization methods for the innovation of Smart Lightweight Composite Structures, in particular for the aeronautical and aerospace applications. His research aims to innovate the next generation smart lightweight structures, with conducting broad research activities in the areas of structural mechanics, optimal design, dynamics, smart sensing technique and experimental testing etc. The research outcomes are expected to have extensive benefits or can directly apply in aircraft and space structures, civil engineering, offshore wind energy, and biomedical devices etc.

Research Key Words:

Aerostructures; Composites; Buckling and Post-buckling; Dynamics; Optimization

Selected Publications:

1. **Z Wu***, G Raju, PM Weaver, Optimization of postbuckling behaviour of variable thickness composite panels with variable angle tows: Towards “Buckle-Free” design concept, International Journal of Solids and Structures 132, 66-79, 2018
2. X Chen, **Z Wu***, G Nie, P Weaver, Buckling analysis of variable angle tow composite plates with a through-the-width or an embedded rectangular delamination, International Journal of Solids and Structures, (10.1016/j.ijsolstr.2018.01.010)

3. X Chen, G Nie, **Z Wu***, Dynamic instability of variable angle tow composite plates with delamination, *Composite Structures*, v187, 1 March 2018, p294-307
4. **Z Wu***, H Li, A novel adaptive sun tracker for spacecraft solar panel based on hybrid unsymmetric composite laminates, *Smart Materials and Structures* 26 (11), 115020, 2017
5. **Z Wu***, G Raju, P Weaver, Analysis and design for the moderately deep postbuckling behavior of composite plates, *Journal of Aircraft*, 327-335, 2016
6. **Z Wu***, X Ma, Dynamic analysis of submerged microscale plates: the effects of acoustic radiation and viscous dissipation, *Proc. R. Soc. A* 472 (2187), 20150728, March 2016
7. PM Weaver, **Z Wu**, G Raju, Optimisation of Variable Stiffness Plates, *Applied Mechanics and Materials* 828, 27-48, 2016
8. **Z Wu***, G Raju, PM Weaver, Framework for the buckling optimization of variable-angle tow composite plates, *AIAA Journal* 53 (12), 3788-3804, 2015
9. G Raju, **Z Wu**, PM Weaver, Buckling and postbuckling of variable angle tow composite plates under in-plane shear loading, *International Journal of Solids and Structures* 58, 270-287, 2015
10. BH Coburn, **Z Wu**, PM Weaver, Buckling analysis of stiffened variable angle tow panels, *Composite structures* 111, 259-270, 2014
11. G Raju, **Z Wu**, PM Weaver, Postbuckling analysis of variable angle tow plates using differential quadrature method, *Composite Structures* 106, 74-84, 2013
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13. RMJ Groh, PM Weaver, S White, G Raju, **Z Wu**, A 2D equivalent single-layer formulation for the effect of transverse shear on laminated plates with curvilinear fibres, *Composite Structures* 100, 464-478, 2013
14. **Z Wu***, G Raju, PM Weaver, Postbuckling analysis of variable angle tow composite plates, *International Journal of Solids and Structures* 50 (10), 1770-1780, 2013
15. **Z Wu***, PM Weaver, G Raju, BC Kim, Buckling analysis and optimisation of variable angle tow composite plates, *Thin-walled structures* 60, 163-172, (**Top 3 Most Cited Paper**)
16. G Raju, **Z Wu**, BC Kim, PM Weaver, Prebuckling and buckling analysis of variable angle tow plates with general boundary conditions, *Composite Structures* 94 (9), 2961-2970
17. **Z Wu***, G Raju, PM Weaver, Comparison of variational, differential quadrature, and approximate closed-form solution methods for buckling of highly flexurally anisotropic laminates, *Journal of Engineering Mechanics* 139 (8), 1073-1083
18. **Z Wu***, K Choudhury, HR Griffiths, J Xu, X Ma, A novel silicon membrane-based biosensing platform using distributive sensing strategy and artificial neural networks for feature analysis, *Biomedical microdevices* 14 (1), 83-93, 2012
19. **Z Wu***, MT Wright, X Ma, The experimental evaluation of the dynamics of fluid-loaded microplates, *Journal of Micromechanics and Microengineering* 20 (7), 075034