

Professor A.V. Shatov

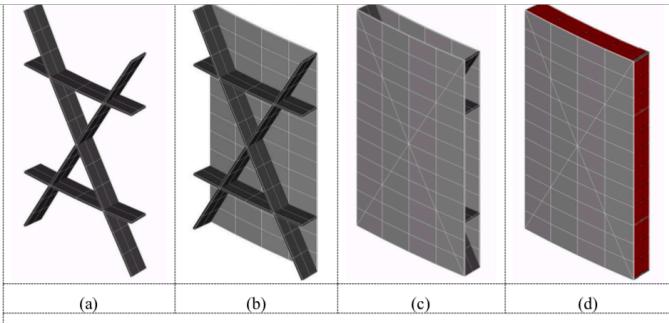


Figure 1. Building the finite element model for the unit cell of the sandwich cylinder.

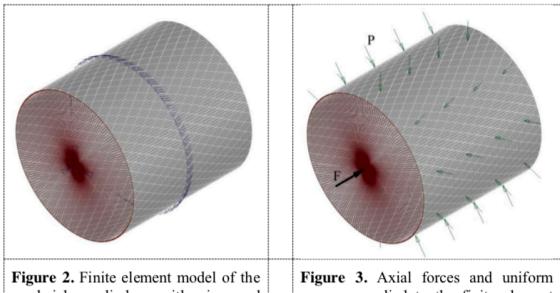


Figure 2. Finite element model of the sandwich cylinder with imposed boundary conditions

Figure 3. Axial forces and uniform pressure applied to the finite element

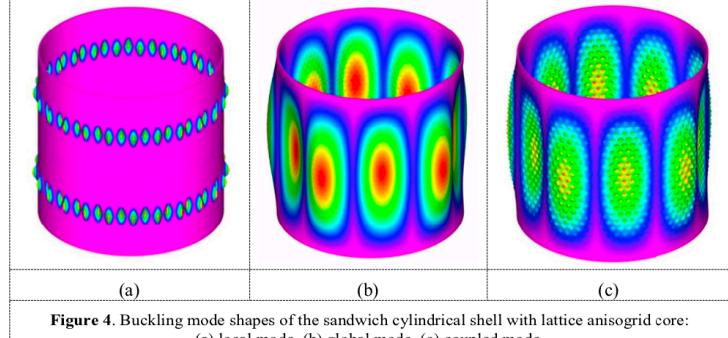


Figure 4. Buckling mode shapes of the sandwich cylindrical shell with lattice anisogrid core:
(a) local mode, (b) global mode, (c) coupled mode.

The figures above are from: A.V. Shatov, A.E. Burov and A.V. Lopatin, “Buckling of composite sandwich cylindrical shell with lattice anisogrid core under hydrostatic pressure”, Journal of Physics: Conference Series, Vol. 1546, Article ID 012139, 2020, doi:10.1088/1742-6596/1546/1/012139

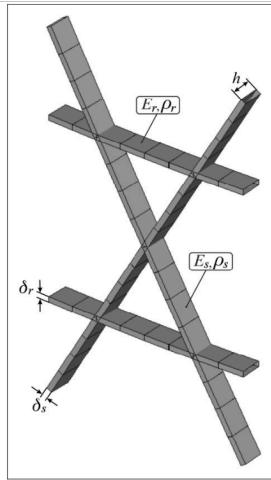


Figure 7. Characteristics of the ribs.

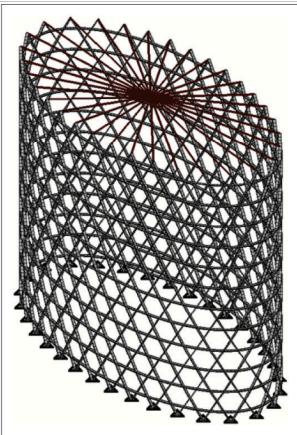
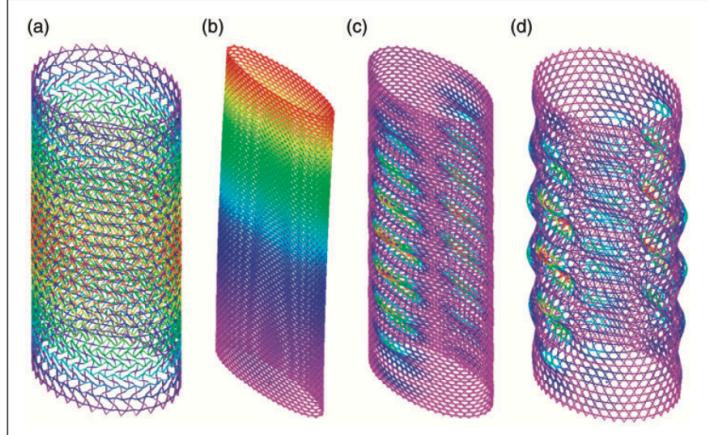


Figure 9. Finite-element model of the composite lattice elliptical cylindrical shell.



stic buckling modes for the lattice shells under axial compression.

The figures in the row above are from: A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Buckling and vibration of composite lattice elliptical cylindrical shells”, Journal of Materials Design and Applications, IMechE 2017, DOI: 10.1177/1464420717736549

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See:

<https://www.researchgate.net/scientific-contributions/AV-Shatov-2072604735>

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Selected Publications:

- Lopatin AV, Morozov EV, Shatov AV (2015) Deformation of a cantilever composite anisogrid lattice cylindrical shell loaded by transverse inertia forces, *Composite Structures* 129: 27–35.
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Fundamental frequency of a cantilever composite filament-wound anisogrid lattice cylindrical shell”, *Composite Structures*, Vol. 133, pp 564-575, December 2015
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “An analytical expression for the fundamental frequency of the composite lattice cylindrical shell with clamped edges”, *Composite Structures*, Vol. 141, pp 232-239, May 2016
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Axial deformability of the composite lattice cylindrical shell under compressive loading: Application to a load-carrying spacecraft tubular body”, *Composite Structures*, Vol. 146, pp 201-206, June 2016
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Bending of the composite lattice cylindrical shell with the midspan rigid disk loaded by transverse inertia forces”, *Composite Structures*, Vol. 150, pp 181-190, August 2016
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Buckling of uniaxially compressed composite anisogrid lattice plate with clamped edges”, *Composite Structures*, Vol. 157, pp 187-196, December 2016
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Buckling of the composite anisogrid lattice plate with clamped edges under shear load”, *Composite Structures*, Vol. 159, pp 72-80, January 2017
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Buckling of uniaxially compressed composite anisogrid cylindrical panel with clamped edges”, *Composite Structures*, Vol. 160, pp 765-772, January 2017
- A.V. Lopatin, E.V. Morozov, A.V. Shatov, Axial vibrations of a composite anisogrid lattice cylindrical shell with end masses, *Compos Struct*, 176 (2017), pp. 1143-1151
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Buckling and vibration of composite lattice elliptical cylindrical shells”, *Journal of Materials Design and Applications*, IMechE 2017, DOI: 10.1177/1464420717736549
- A.V. Lopatin, E.V. Morozov and A.V. Shatov, “Fundamental frequency of a composite anisogrid lattice cylindrical panel with clamped edges”, *Composite Structures*, Vol. 201, pp 200-207, 1 October 2018
- A.V. Shatov, A.E. Burov and A.V. Lopatin, “Buckling of composite sandwich cylindrical shell with lattice anisogrid core under hydrostatic pressure”, *Journal of Physics: Conference Series*, Vol. 1546, Article ID 012139, 2020, doi:10.1088/1742-6596/1546/1/012139