Professor John D. Whitcomb

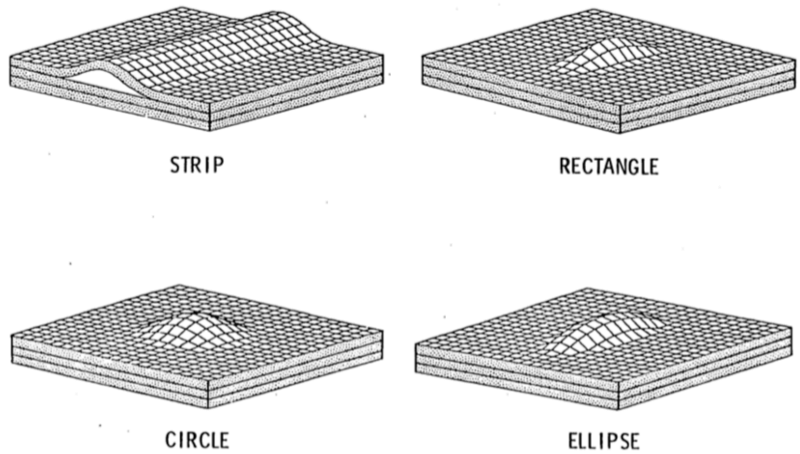

Figure 1.- Shapes of delaminations.

From: K.N. Shivakumar and J.D. Whitcomb, "Buckling of a Sublaminate in a Quasi-Isotropic Composite Laminate", Journal of Composite Materials, January 1985, vol. 19, no. 1, pp. 2-18

See:
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https://scholar.google.com/citations?user=Iqton40AAAAJ&hl=en
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Education:
1973 - B.S. in Mechanical Engineering, North Carolina State University
1976 - M.S. in Mechanical Engineering, Stanford University
1988 - Ph.D. in Materials Engineering Science, VPI & SU

Research Interests:
Prediction of damage initiation and growth in cryogenic composites and foams; Multiscale computational mechanics from nano to macro; Multifunctional materials; Numerical simulation of electric double layer supercapacitor; Mechanics of textile composites; Mechanics of polymer film scratching; Novel finite element analysis strategies

Selected Publications:
Whitcomb, J.D. (1981). Finite element analysis of instability related delamination growth. Journal of Composite Materials Vol. 15, No. 5, pp. 403–426
Whitcomb, J.D., 1982. Approximate analysis of postbuckled through-the-width delaminations. Comp. Technol., 4: 71-77
Whitcomb, J. D. (1983) Strain Energy Release Rate Analysis of Cyclic Delamination Growth in Compressively Loaded Laminates, NASA TM-84598, Washington, DC.

Whitcomb, J. D., "Strain-Energy Release Rate Analysis of Cyclic Delamination Growth in Compressively Loaded Laminates," Effects of Defects in Composite Materials. ASTM STP 836, K. L. Reifsnider, Ed., American Society for Testing and Materials, Philadelphia, 1984, pp. 175-193

John D. Whitcomb and I.S. Raju, Analysis of interlaminar stresses in thick composite laminates with and without edge delamination", NASA Technical Memorandum 85738, January 1984

Whitcomb J.D., 1984, Analysis of instability-related growth of a through-width delamination, NASA TM-86301

K.N. Shivakumar and J.D. Whitcomb, "Buckling of a Sublaminate in a Quasi-Isotropic Composite Laminate", Journal of Composite Materials, January 1985, vol. 19, no. 1, pp. 2-18

Ramkumar, R. L.; Whitcomb, J. D.: Characterization of mode I and mixed-mode delamination growth in T300/5208 graphite epoxy. Delamination and Debonding of Materials, ASTM STP 876 1985: 315–335

Whitcomb, J.D., 1986. Parametric analytical study of instability related delamination growth. Composites Sci. Technol., 25: 19-48.

Whitcomb, J. D. (1988) Mechanics of Instability-related Delamination Growth. NASA TM-100662, Washington, DC.

Whitcomb, J. D. (editor), Proceeding of Composite Materials: Testing and Design Conference, ASTM, Philadelphia, STP 972, 1988

Whitcomb, J. D. (1989) Predicted and observed effects of stacking sequence and delamination size on instability related delamination growth. Journal of Composites Technology and Research, 11, 94–98

Whitcomb, J. D. (1989) Comparison of full 3-d, thin-film 3-d and thin-film plate analyses of a postbuckling embedded delamination. Proc. 12th Canadian Congress Appl. Mechanics, Vols. 1 and 2, 144–145

Whitcomb, J.D. and K.N. Shivakumar, 1989. Strain energy release rate analysis of a laminate with a post buckled delamination. J. Composite Materials, 23: 714-734

Whitcomb, J.D. (1989). Three-dimensional analysis of a postbuckled embedded delamination. Journal of Composite Materials 23, 862–889.

Whitcomb, J.D.: Mechanics of instability-related delamination growth. In: Garbo, S.P. (ed.) Composite materials: testing and design, vol 9. ASTM STP 1059. American Society for Testing and Materials, Philadelphia pp. 215–230 (1990)

J.D. Whitcomb, "Iterative global/local finite element analysis", Comput Struct, 40 (4) (1991), pp. 1027-1031

Whitcomb, J.D. (1992). Analysis of a laminate with a postbuckled embedded delamination. Journal of Composite Materials 26, 1523–1535.

Whitcomb, J. D., and Kyeongsik, W ., "Application of Iterative Global/Local Finite Element Analysis. Part 1: Linear Analysis," Communications in Numerical Methods in Engineering, Vol. 9, 1993, pp. 745-756.

Whitcomb, J. D., and Kyeongsik, W ., "Application of Iterative Global/Local Finite Element Analysis. Part 2: Geometrically Nonlinear Analysis," Communications in Numerical Methods in Engineering, Vol. 9, 1993, pp. 757-766

Whitcomb, J. D., and Woo, K., 1994, "Enhanced Direct Stiffness Method for Finite Element Analysis of Textile Composites," Compos. Struct., 28 , pp. 385–390.

Whitcomb, J. D., and Sriengan, K., 1996, "Effect of Various Approximations on Predicted Progressive Failure on Plain Weave Composites," Compos. Struct., 34 , pp. 13–20

J. Whitcomb, X.D. Tang, Effective moduli of woven composites, J Compos Mater, 35 (23) (2001), pp. 2127-2144

J.S. Tate, A.D. Kelkar, J.D. Whitcomb, Effect of braid angle on fatigue performance of biaxial braided composites, Int. J. Fatigue, 28 (2006), pp. 1239–1247

Robert Brown, Kaushik Das, Paul Cizmas and John Whitcomb, "A numerical investigation of actively cooled structures in hypersonic flow", AIAA Structures, Structural Dynamics and Materials Conference, April 2012

C.L. Bertagne, R.B. Sheth, D.J. Hartl, J.D. Whitcomb, Simulating coupled thermal-mechanical interactions in morphing radiators, in Proceedings of SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring (International Society for Optics and Photonics, San Diego, 2015), p. 94312F–94312F–10

Ballard, MK, Whitcomb, JD. Effective use of cohesive zone-based models for the prediction of progressive damage at the fiber/matrix scale. J Compos Mater 2017; 51: 649–669.

Ballard, MK, Whitcomb, JD. Effect of heterogeneity at the fiber–matrix scale on predicted free-edge stresses for a [0°/90°] s laminated composite subjected to uniaxial tension. J Compos Mater 2018; 53: 625–639.