Dr. Carlos G. Davila

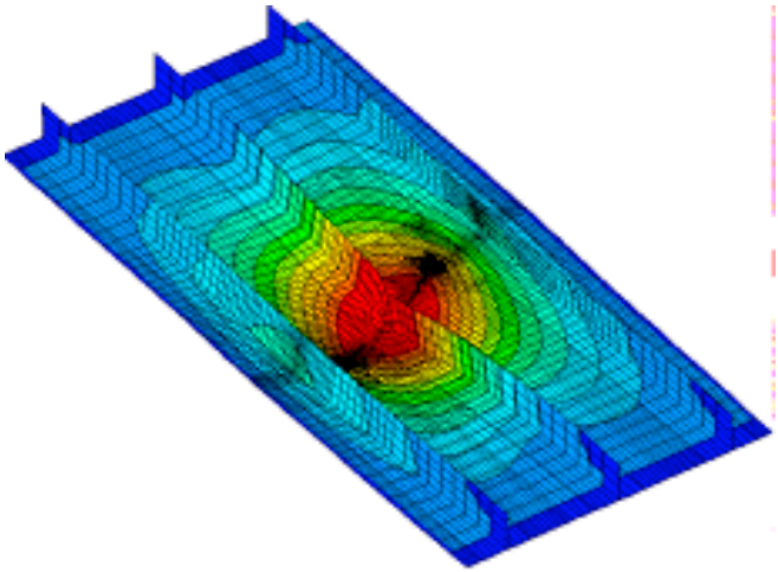

Figure 16. Typical out-of-plane deformation contours for panel P-30.

From: Carlos G. Davila, Damodar R. Ambur and David M. McGowan, "Analytical prediction of damage growth in notched composite panels loaded in axial compression", AIAA Paper AIAA-99-1435, 40th AIAA/ASME Structures, Structural Dynamics and Materials Conference, St. Louis, Missouri, April 12-15, 1999; Also, Journal of Aircraft, May 1999

See:
https://www.linkedin.com/in/carlos-g-d%C3%A1vila-6817859
https://www.researchgate.net/profile/Carlos_Davila8
https://scholar.google.com/citations?user=GgY8YBUAAAAJ&hl=en

Senior Aerospace Researcher
NASA Langley Research Center, Hampton, Virginia, USA

Biography:
Carlos' research interests include the development of finite element models for the prediction of damage propagation and residual strength of metallic and composite structures. The results of his research, which he has published in 36 peer-reviewed journal papers, numerous conference publications, and 33 NASA reports have received more than 5000 citations. He has also served as a structures analyst in several accident investigations, including the 2001 AA587 Airbus A300-600R accident investigation. In 2006, he received the NASA Exceptional Technical Achievement Medal for his work on damage models for composite structures.

Education:
1987-1991 PhD Aerospace Engineering Virginia Polytechnic Institute and State University
1984-1986 MS, Mechanical Engineering, Virginia Tech
1982-1984 BS, Mechanical Engineering, Virginia Tech
1979-1981 Universite libre de Bruxelles

Selected Publications:

Carlos G. Davila and Eric R. Johnson, "Analysis of delamination initiation in postbuckled dropped-ply laminates", AIAA Journal, Vol. 31, No. 4, April 1993

Carlos G. Davila, Damodar R. Ambur and David M. McGowan, "Analytical prediction of damage growth in notched composite panels loaded in axial compression", AIAA Paper AIAA-99-1435, 40th AIAA/ASME Structures, Structural Dynamics and Materials Conference, St. Louis, Missouri, April 12-15, 1999; Also, Journal of Aircraft, May 1999

Camanho, P.P, Davila, C.G and Ambur, D.R(2001) Numerical Simulation of Delamination Growth in Composite Materials, NASA/TP-2001-211041

Jaunky, N., Ambur, D. R., Davila, C. G., and Hilburger, M. W., "Progressive Failure Studies of Composite Panels with and without Cutouts," NASA/CR-2001-211223, September 2001

P. P. Camanho and C. G. Davila, Mixed-Mode Decohesion Finite Elements for the Simulation of Delamination in Composite Materials, NASA/TM-2002-211737, NASA Langley Research Center, Virginia, USA (2002).

C. G. Davila and P. P. Camanho, "Physically based failure criteria for FRP laminates in plane stress," NASA-TM, 2003.

A.L. Keesecker, C.G. Davila, E.R. Johnson, and J.H. Starnes Jr. Crack path bifurcation at a tear strap in a pressurized shell. Computers and Structures, 81:1633–1642, 2003

Damodar, R. A., Jaunky, N., Hilburger, M., Davila, C. G., (2004). Progressive failure analyses of compression-loaded composite curved panels with and without cutouts, Composite Structures 65: 143-155.

Goyal V.K., Johnson E.R., Davila C.G., 2004, Irreversible constitutive law for modeling the delamination process using interfacial surface discontinuities, Computers and Structures 65(3-4): 289-305.

Turon A., Camanho P.P., Costa J., Davila C.G., 2006, A damage model for the simulation of delamination in advanced composites under variable-mode loading, Mechanics of Materials 38(11): 1072-1089.

P. Maimi, P. Camanho, J. Mayugo, and C. Davila, "A continuum damage model for composite laminates: part II— computational implementation and validation," Mechanics of Materials, vol. 39, pp. 909–919, 2007.

Davila, C.G., Camanho, P.P. and Turon, A., Cohesive Element for Shells. National Aeronautics and Space Administration, NASA Langley Research Center. Hampton, VA : NASA, 2007. NASA/TP-2007-214869

Carlos G. Davila, Pedro P. Camanho and Albert Turon, "Effective simulation of delamination in aeronautical structures using shells and cohesive elements", AIAA Journal of Aircraft, March 2008

Bisagni C, Vescovini R, Dávila CG. Single-Stringer Compression Specimen for the Assessment of Damage Tolerance of Postbuckled Structures. J Aircraft. 2011; 48(2): 495-502.

Bisagni C, Dávila CG. Experimental Investigation of the Postbuckling Response and Collapse of a Single-Stringer Specimen. Compos Struct. 2014; 108: 493-503.

Bisagni C, Dávila CG, Rose CA, Zalameda JN. Experimental Evaluation of Damage Progression in Postbuckled Single Stringer Composite Specimens. 29th American Society of Composites Technical Conference La Jolla, CA, 2014.

Dávila CG, Bisagni C. Fatigue Life and Damage Tolerance of Postbuckled Composite Structures. 1st Int Conf on Mechanics of Composites, Stony Brook, NY, 2014.

Dávila CG, Bisagni C, Rose CA. Effect of Buckling Modes on the Fatigue Life and Damage Tolerance of Stiffened Structures. SciTech 2015, Kissimmee, FL, 2015.

Carlos G. Davila, Chiara Bisagni and Cheryl Rose, "Effect of buckling modes on the fatigue life and damage tolerance of stiffened structures", 56th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, January 2015

Carlos G. Davila and Chiara Bisagni, "Fatigue life of postbuckled structures with indentation damage", ECCM17: 17th European Conference on Composite Materials, Munich, Germany, 26-30 June 2016

Carlos G. Davila and Chiara Bisagni, “Fatigue Life and Damage Tolerance of Postbuckled Composite Stiffened Structures with Initial Delamination”, Composite Structures, Vol. 161, November 2016
Carlos G. Davila and Chiara Bisagni, “Fatigue life and damage tolerance of postbuckled composite stiffened structures with indentation damage”, Journal of Composite Materials, Vol. 52, No. 7, March 2018