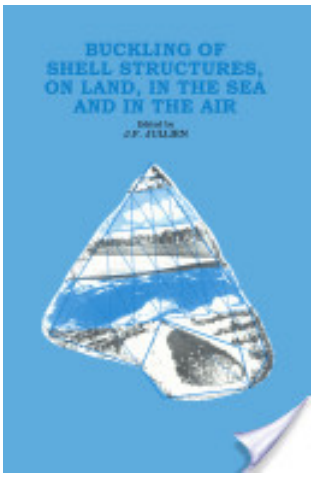

Jean-François Jullien (19?? – 2016)

See:
https://www.researchgate.net/profile/J_Jullien

Professor INSA de Lyon Villeurbanne, France Jean-Francois.Jullien@insa-lyon.fr
J-F Jullien, born in 1942, received his engineering degree from INSA in 1966 and two PhD in 1970 and 1974 from INSA of Lyon. Professor in civil engineering at INSA of Lyon.

Selected Publications:
BOOK:
Jullien, J. F., ed., 1991, Buckling of Shell Structures, on Land, in the Sea, and in the Air, Elsevier Science Publishers, London.

Jullien, J. F. and Limam, A., "Effects of Openings on the Buckling of Cylindrical Shells Subjected to Axial Compression, Thin-Walled Structures, Vol. 31, 1998, pp. 187-202.
ABSTRACT: Experimental and numerical methods are used to study the stability problem of cylindrical shells with cut-outs. The paper presents parametric research of the shape (square, rectangular, circular), the dimensions (axial and circumferential sizes, diameter) of the hole. The effect of the location and the number of the holes are also studied. The analysis indicates that the critical load is sensitive to the opening angle or circumferential size of the hole. The function (critical load-opening angle) is linear for large openings and independent of the geometrical imperfections of the shell. However for small openings, it is necessary to take into account the coupling between the initial geometrical imperfections and the openings. The linear approach does not fit because of the importance of the evolution of the displacements near the openings. These results will be used for the development of European rules.

J.F. Jullien, A. Limam and G. Gusic (URGC Bât 304, INSA de Lyon 69621 Villeurbanne, France), "Cylindrical Shells Buckling Under External Pressure — Influence of Localised Thickness Variation", Advances in Steel Structures (ICASS '99), Proceedings of The Second International Conference on Advances in Steel Structures 15–17 December 1999, Hong Kong, China, 1999, pp. 613-619, doi:10.1016/B978-008043015-7/50072-5
ABSTRACT: Aggressive environments can provoke corrosion of thin cylindrical shells widely used in different

engineering applications. Localised decrease of shell thickness usually causes buckling load reduction. Recently in 1994, Koiter et al. investigated the influence of modal thickness variation on a buckling load of an axially compressed shell. The thickness variation is assumed to be axisymmetrical and sufficiently small. In this paper Koiter et al. show that thickness imperfection can provoke a loss of buckling load which is, for small imperfection amplitude, a linear function.

G. Gusic (1), A. Combescure (2), and J. F. Jullien (1)
(1) URGC Structures, Bât 304, INSA de Lyon, 20 Av. A. Einstein, 69621 Villeurbanne Cedex, France
(2) LMT ENS-Cachan, 61 Bd du Président WILSON, 94235 Cachan Cedex, France
"The influence of circumferential thickness variations on the buckling of cylindrical shells under external pressure", Computers & Structures, Vol. 74, No. 4, February 2000, pp. 461-477, doi:10.1016/S0045-7949(99)00053-X
ABSTRACT: Imperfection sensitivity of thin shells of constant thickness was widely studied during the last 50 years (J.G. Teng, Appl. Mech. Rev. 1996:49(4)). Recently, Koiter et al. (Int. J. Solids Struct. 1994:31(6):797–805) investigated the influence of axisymmetric modal thickness variation on the buckling load of an axially compressed shell. In this paper, the influence of harmonic thickness variation in the circumferential direction on thin cylindrical shell buckling under external pressure is analysed by means of FE bifurcation analysis. Two different FE codes were used, one with quasi-axisymmetrical multimodal Fourier analysis (A. Combescure, Etude de la stabilité des coques minces sous chargements complexes dans INCA. Rapport DMT/94-460, in French, 1994; Modélisation des coques axisymétriques avec imperfection quelconque: L'élément COMI (in French). Rapport DMT/97-189, 1997; Schauder B. Flambage des Coques Cylindriques en Fléxion. Thèse de doctorat, INSA de Lyon, in French, 1997), and the second one with 3D shell elements. A new quasi-axisymmetric element (COMI) is presented. It uses Fourier series expansion in the circumferential direction coupled with a full numerical integration around the circumference, which allows any variation of thickness or of initial imperfections.

A. Limam and C. Mathon (LGCIE INSA-Lyon, Villeurbanne Cedex, France)
A. Combescure and J.F. Jullien (LaMCoS INSA-Lyon, Villeurbanne Cedex, France)
"Buckling of thin-walled pressurized cylinders under bending load", in Structures and Granular Solids edited by Chen, et al, Taylor & Francis Group, London, 2008, ISBN 978-0-415-47594-5
ABSTRACT: The buckling behavior of thin-walled pressurized cylinders under bending load is investigated through an intensive experimental campaign on thin shells ($550 < R/t < 1450$) of moderate length (L/R about equal to 2.0). The experimental buckling behavior of pressurized shells under bending is somewhat similar to the behavior under axial compression: for low pressurization cases, the load-carrying capacity is strongly sensitive to geometrical imperfections, whereas above a sufficiently high level of pressure, the buckling occurs for a stress value close to the theoretical prediction. A major difference between bending and pure compression lies in the post-critical behavior; the reaching of the critical load under bending is accompanied by wrinkles or buckles confined to a small area around the (maximally) compressed fiber. It allows, in the case of sufficiently pressurized cases, stress redistribution around the buckling zone. Therefore the collapse moment is much higher than the bifurcation moment, in contrast to the case of pure axial compression. In a second section, non-linear finite element analyses are carried out to simulate the conducted tests. The numerical model correctly follows the experimental results.

Waeckel N, Jullien J F, Lefermann P 1984 Experimental studies on the instability of cylindrical shells with initial geometric imperfections. In Recent advances in nuclear component testing and theoretical studies on buckling (ed.) G Baylac pp 33–42

A. Limam, J.F. Jullien, E. Grego, and D. Lestrat, Buckling of thin-walled cylinders under axial compression and internal pressure, Proc. Int. Colloquium on Buckling of Shell Structures on Land, in the Sea and in the Air, Lyon, September 1991, 359-369, Ed. J. F. Jullien, Elsevier, 1991.