



Professor Marios K. Chryssanthopoulos

See:

http://www.surrey.ac.uk/cce/people/marios_chryssanthopoulos/

<http://www.journalogy.net/Author/21872959/marios-k-chryssanthopoulos>

http://portal.surrey.ac.uk/portal/page?_pageid=822,372404&_dad=portal&_schema=PORTAL

University of Surrey, UK

Career Résumé:

Marios Chryssanthopoulos joined the University of Surrey in June 2000 after a period of eleven years at Imperial College where he was Lecturer (1989-95) and subsequently Reader in Engineering Structures (1996-2000).

Marios trained as a Naval Architect at the University of Newcastle-upon-Tyne and the Massachusetts Institute of Technology, and then read for a PhD in Structural Engineering at Imperial College. Before embarking on an academic career, he worked with a firm of structural engineering consultants and the R&D department of a marine classification society.

His research interests relate to how uncertainty in materials, construction techniques and loading influence the performance of structures and the development of design practice. He has undertaken a wide range of experimental, analytical and design-orientated studies, encompassing thin shells of steel and glass fibre composite materials, reinforced concrete and steel framed buildings, and highway bridge structures. During the course of these studies he has supervised eleven PhD theses and numerous dissertations, has collaborated with a

number of colleagues both in academia and in industry, and has co-authored over 80 publications, many in leading international journals.

Current research projects:

- Imperfection sensitivity of shells
- Interaction between buckling and material failure in fibre-reinforced shells
- Assessment of manufacturing defects for tolerance specification and quality control
- Probabilistic modeling of deterioration and whole-life assessment
- Prediction of remaining fatigue life using probabilistic fracture mechanics
- Ductility and failure mode control in building frames under seismic loading
- Development of probabilistic codes of practice

In structural engineering we should strive to understand and quantify the behaviour of systems as opposed to individual components. Given that codes of practice are currently almost exclusively based on component design, there is scope for applied research on many different aspects of structural systems. Cross-fertilisation between construction and manufacturing should contribute to the successful transition from components to systems in structural design. Equally, the drive for lighter and more durable construction materials promotes the development of novel structural systems, in which different constituents are modeled for maximum benefit. There is also a need to predict the performance of structures over their entire life, in order to improve our decision making process both at the initial stage and during service. In the longer term, this research will be absorbed into the new generation of design codes.

The above mentioned projects have high analytical and numerical modeling content, with selective experimentation providing physical insight into the various phenomena and the opportunity for model validation.

Recent Publications:

- M.K. Chryssanthopoulos, A. Spagnoli, B.A. Burgan and S. Awad,
Tolerance Levels and Design Strength in Shell Buckling Codes
Workshop on Imperfections in Metal Silos, INSA Lyon, April 1996.
- M.K. Chryssanthopoulos and A. Spagnoli
The Influence of Radial Edge Constraint on the Stability of Stiffened Conical Shells in Compression
Thin-Walled Structures, Vol. 27, No. 2, 1997, pp. 147-163.
- T. Micic and M.K. Chryssanthopoulos
System Reliability of Beam-and-Slab Bridges
7th IFIP/WG 7.5 Conf. on Reliability and Optimisation of Structural Systems, D. Frangopol et al. (eds),
Elsevier, 1997.
- M.K. Chryssanthopoulos, C. Poggi and A. Spagnoli
Buckling Design of Axially Compressed Conical Shells
Int. Conf. on Advances in Steel Structures, ICASS '96, S.L. Chan and J.G. Teng (eds), Pergamon Press, 1997,
pp. 759-766.
- M.K. Chryssanthopoulos, T. Micic and G. M. E. Manzacchi
Reliability Evaluation of Short-Span Bridges
Int. Symp. on The Safety of Bridges, P.C. Das (ed), Thomas Telford, 1997, pp. 110-128.
- M.K. Chryssanthopoulos, N. Pariatmono and A. Spagnoli

Buckling Tests of Unstiffened and Stiffened Conical Shells in Compression
Int. Conf. on Carrying Capacity of Steel Shell Structures, V. Krupka and P. Schneider (eds), 1997, pp. 16-23.
M.K. Chryssanthopoulos

Probabilistic Buckling Analysis of Plates and Shells
Thin-Walled Structures, Vol. 30, Nos. 1-4, 1998, pp. 135-157.
I.E. Esong, A.Y. Elghazouli and M.K. Chryssanthopoulos

Measurement Techniques for Buckling-Sensitive Composite Cylinders
Journal of the British Society for Strain Measurement, February 1998, pp. 11-17.
M.K. Chryssanthopoulos, C. Poggi and A. Spagnoli

Buckling Design of Conical Shells based on Validated Numerical Models
Thin-Walled Structures, Vol. 31, Nos. 1-3, 1998, pp. 257-270.
A.J. Kappos, M.K. Chryssanthopoulos and C. Dymiotis

Probabilistic Assessment of European Seismic Design Practice for Confined Members
European Earthquake Engineering, Vol. XII, No. 3, 1998, pp. 38-51.
A.Y. Elghazouli, M.K. Chryssanthopoulos and A. Spagnoli

Experimental Response of Glass-reinforced Plastic Cylinders under Axial Compression
Marine Structures, 11(9), 1998, pp. 347-371.
A.J. Kappos, M.K. Chryssanthopoulos and C. Dymiotis

Probabilistic Assessment of Eurocode 8 Provisions for Confined Members
6th SECED Conference on Seismic Design Practice, E. Booth (ed), A A Balkema, 1998, pp. 427-434.
M.K. Chryssanthopoulos, A.Y. Elghazouli and I.E. Esong

An Experimental and Numerical Investigation into the Buckling Behaviour of GRP Shells under Compression and Bending
European Conference on Composite Materials ECCM-8, I. Crivelli Visconti (ed), Woodhead Publishing Limited, 1998, Vol. 1, pp. 439-446.
A. Spagnoli and M.K. Chryssanthopoulos

Buckling Design of Stringer-Stiffened Conical Shells in Compression
J. of Struct. Engg., ASCE, 125(1), January 1999, pp. 40-48.
A.J. Kappos, M.K. Chryssanthopoulos and C. Dymiotis

Uncertainty Analysis of Strength and Ductility of Confined Reinforced Concrete Members
Engineering Structures, Vol. 21, 1999, pp. 195-208.
A. Spagnoli and M.K. Chryssanthopoulos

Elastic Buckling and Postbuckling Behaviour of Widely-Stiffened Conical Shells under Axial Compression
Engineering Structures, Vol. 21, 1999, pp. 845-855.
M.K. Chryssanthopoulos, G.M.E. Manzacchi and A.S. Elnashai

Probabilistic Assessment of Ductility for Earthquake-Resistant Design of Steel Members
Journal of Constructional Steel Research, Vol. 52, 1999, pp. 47-68.
A.Y. Elghazouli, M.K. Chryssanthopoulos and I.E. Esong

Buckling of Woven GFRP Cylinders under Concentric and Eccentric Compression
Composite Structures, Vol. 45, 1999, pp. 13-27.
M.K. Chryssanthopoulos, A.Y. Elghazouli and I.E. Esong

Compression Tests on Anti-Symmetric Two-Ply GFRP Cylinders
Composites Part B: Engineering, Vol. 30, 1999, pp. 335-350.
C. Dymiotis, A.J. Kappos and M.K. Chryssanthopoulos

Seismic Reliability Assessment of R/C Frames Including Uncertainty in Member Capacity and Interstory Drift
J. of Struct. Engg., ASCE, 125(9), September 1999, pp. 1038-1047.

P.C. Das, T. Micic and M.K. Chryssanthopoulos
Reliability-Based Assessment of Highway Bridges
Report of Committee C11-Road Bridges, published by World Road Association (PIARC), 1999, Paris. [ISBN: 2-84060-101-X]

G. Sterritt and M.K. Chryssanthopoulos
Deterioration Prevention and Updating as a Means of Structure Specific Bridge Management
Proc. 8th Int. Conf. Structural Faults and Repair, London, July 1999.

G. Sterritt and M.K. Chryssanthopoulos
Probabilistic Limit State Modelling of Deteriorating RC Bridges using a Spatial Approach
Proc. Int. Conf. on Current and Future Trends in Bridge Design Construction and Maintenance, Thomas Telford, 1999, pp. 518-528.

P.C. Das and M.K. Chryssanthopoulos
Uncertainty Analysis of the Bridge Management Process and the Significance of Updating
Proc. Int. Conf. on Current and Future Trends in Bridge Design Construction and Maintenance, Thomas Telford, 1999, pp. 506-517.

M.K. Chryssanthopoulos, C. Dymiotis and A.J. Kappos
Probabilistic Calibration of Behaviour Factors in EC8-Designed R/C Frames
Engineering Structures, Vol. 22, 2000, pp. 1028-1041.

M.K. Chryssanthopoulos, A.Y. Elghazouli, and I.E. Esong
Validation of FE Models for Buckling Analysis of GFRP Cylinders
Composite Structures, Vol. 49, 2000, pp. 355-367.

C. Dymiotis, A.J. Kappos and M.K. Chryssanthopoulos
Seismic Reliability Assessment of Multi-storey R/C Frames
12th World Conf. on Earthquake Engineering, New Zealand, February 2000.

A.Y. Elghazouli and M.K. Chryssanthopoulos
Experimental Techniques for Numerical Simulation of Composite Shells
9th European Conf. on Composite Materials (ECCM-9), Brighton, June 2000.

M.K. Chryssanthopoulos and A.Y. Elghazouli
Validation of Numerical Modelling for Design of Composite Shells
9th European Conf. on Composite Materials (ECCM-9), Brighton, June 2000.

T.D. Righiniotis, M.K. Chryssanthopoulos
Fracture mechanics based fatigue assessment of highway bridges
ICE/Highways Agency Conf. Bridge Rehabilitation in the U.K., October 2000, London