

Dr. Alan O'Connor BA, BAI, MAI, PhD, CEng FIEI, MICT
Senior Lecturer, Trinity College Dublin

Personal Information	Nationality: Irish Year of birth: 1973
Contact	Email: alan.oconnor@tcd.ie Web www.tcd.ie/civileng/irg (Infrastructure Research Group TCD) Phone: +353-1-896-1822 Fax: +353-1-677-3072
Education	Degree in Structural Engineering, Specialising in finite element modelling of concrete bridges, from the University of Dublin, Trinity College, Ireland, 1994. Diploma in Concrete Technology, Institution of Concrete Technology, London, 2000 Ph.D. Degree in Probabilistic-based Load Modelling for Bridge Structures from the University of Dublin, Trinity College, Ireland, 2001.
Specialization	Probability based safety assessment of bridges, probability based optimised maintenance management of bridges, structural reliability, statistical load modelling, design code calibration, durability and performance based design, numerical analysis of structures, statistical modelling, bridge design.
Professional Societies	Fellow Institution of Engineers of Ireland, Chartered Engineer, CEng FIEI Institution of Structural Engineers, London (Graduate Member) Institution of Concrete Technology, London, MICT (Associate Member) International Association for Bridge and Structural Engineering (IABSE) International Association for Bridge Management & Safety (IABMAS) International Society for Weigh in Motion (ISWIM)

Dr. O'Connor is a Chartered Engineer (CEng IEI) with considerable experience in safety assessment of existing structures. His PhD specialisation involved the derivation of site-specific load models for new and existing structures. As part of this work he was responsible for the re-calibration of the Normal Load Model of Eurocode 1, Part 3, Traffic Loads on Bridges at the Laboratoire Central des Ponts et Chaussées (LCPC), in Paris. In recent years his work has involved the incorporation of advanced site-specific traffic loading models and time dependent material deterioration models in safety assessment of existing structures.

Dr. O'Connor was an expert member of COST 345 – Procedures Required for Assessing Highway Structures – workgroup 4, Numerical Methods, and of the subcommittee on Bridge Applications of Weigh-in-Motion of COST 323 – the European Co-ordination Committee on Weigh-in-Motion of Road Vehicles. He is currently a management committee member of the COST action TU0601 - Robustness of Structures. Dr. O'Connor was an Assistant Contractor in the EU 5th Framework project entitled *Sustainable and Advanced Materials for Road Infrastructures* (SAMARIS). He was a task leader on an EU *INTERREG III* funded project for assessment of structures in marine environments. He is currently task leader of the task *Probabilistic Repair Optimisation for Structures in Marine Environments* in the EU funded project DuratiNet.

In 2001 Dr. O'Connor prepared a guidance document for the Irish National Roads Authority entitled "*High Performance Concrete Bridge Beams – Recommendations on the Use of High Performance Concrete in Prestressed Pretensioned Bridge Beams in Design to BS5400*".

Dr. O'Connor is employed as a Senior Lecturer in Structural and Bridge Engineering at the University of Dublin, Trinity College. To date he has authored over 80 technical papers and has been responsible for the supervision of both PhD and MSc students in a variety of topics related to structural safety and bridge engineering. He has spoken at numerous international conferences on these topics. He has been the recipient of numerous awards and research contracts.

Whilst employed at Trinity College Dublin, Dr. O'Connor has also been involved in the design of a number of bridge structures as a specialised consultant to Roughan O'Donovan Consulting Engineers in Dublin. Examples include a pair of 158m push-launch post-tensioned concrete box girder bridges, the first constructions of this kind built in Ireland and the Samuel Beckett Cable Stayed Bridge designed by Santiago Calatrava.

More recently Dr. O'Connor has been engaged as a specialised external consultant to RAMBØLL Consulting Engineers in Copenhagen where he had advised on, and assisted in, the performance of probability based analysis of bridges. Projects have included the 3.2km Storstrøm bridge in Southern Denmark and the 200m Bergforsen steel railway bridge in northern Sweden.

In 2009 Dr. O'Connor became a Director of Roughan O'Donovan Innovative Solutions (www.rod.is.ie). *Roughan & O'Donovan Innovative Solutions (RODIS)* is a subsidiary company of Roughan & O'Donovan Consulting Engineers (ROD) specialising in complex and innovative structural and bridge engineering solutions for the international market.

Employment

1998 -

Trinity College Dublin, Ireland

Senior Lecturer

Department of Civil, Structural & Environmental Engineering.

**Thesis Supervision,
Research Contracts &
Awards****Supervision:**

10 MSc and 5 PhD projects (Completed)

2 MSc and 5 PhD projects (Currently underway)

Contracts:

EU FP5 SAMARIS	€56,000 (2003 – 2005)
EU Interreg iiib MEDACHS	€608,000 (2005 – 2007)
NRA Ferrycarrig Bridge Instrumentation & Monitoring	€100,000 (2007 – 2010)
French Government funded MARIO	€10,000 (2007 - 2010)
NRA – <i>Probabilistic Assessment of Bridges</i>	€78,000 (2008 - 2010)
EU Interreg iv DURATINet	€250,000 (2009 – 2011)
NRA – <i>Development of a Bridge Network Life Cycle Cost Model</i>	€109,000 (2009 – 2011)
NRA – <i>Optimisation of Design of Earthworks Operations for Road Schemes</i>	€109,000 (2010 – 2012)

Awards:

Enterprise Ireland – FP7 Proposal Coordinator Grant. To facilitate preparation of the FP7 project STORM: Sustainable Transportation: Optimised Repair and Maintenance. (2008)

ICE award for experiments in Austria and Slovenia in cooperation with the University of Vienna and the Slovenian National Civil Engineering Institute (ZAG). The value of the award was £10,000 GBP. (2002)

Enterprise Ireland International Collaboration Program. (2001)

Journal Reviewer

ACI Structural Journal (2008 –)

ACI Materials Journal (2008 –)

Structural Engineering International (SEI) – Journal of the International Association of Bridge and Structural Engineers (IABSE) (2008 –)

ASCE Journal of Bridge Engineering (2007 –)

ICE Journal of Bridge Engineering (2007 –)

International Journal of Structure and Infrastructure Engineering (2006 –)

Journal of Computer-Aided Civil and Infrastructure Engineering (2005 –)

Journal Editor

Guest Editor of Special Issue of the International Journal of Structure and Infrastructure Engineering – devoted to *Monitoring, Modelling and Assessment of Structural Deterioration in Marine Environments* (2010)

**Conference
Organisation**

1st International Conference – Construction Heritage in Coastal and Marine Environments – Damage, Diagnostics, Maintenance and Rehabilitation. MEDACHS 08. Lisbon, January 2008.

5th International Conference on Weigh in Motion, Paris, May 2008

Bridge Research in Ireland Symposium, TCD, 2006 & 2008

**Committee
Membership:
International/National**

Federation of European Highway Research Laboratories (FEHRL) – Research Area Leader – Design & Production

Management Committee COST TU0601 Action (2007–): *Robustness of Structures*

Council Member of Engineers Ireland, Structures & Construction Division

COST 345 Action (2000 – 2002): *Procedures Required for Assessing Highway Structures*.

COST 323 Action (1998 – 2000): *Weigh in Motion of Road Vehicles*

Past Council Member of Institution of Structural Engineers, Republic of Ireland Branch

Past Council Member of the Irish Concrete Society

Teaching

Since being appointed in the Department I have been involved in teaching at all levels. Until June 2003 I was responsible for coordinating and teaching JF Engineering Graphics to on average 180 students. I moved from this course to teach SF Engineering Structures in 2003. This course also has approximately 180 students. I have also had responsibility for teaching JS Engineering Solids. I have consistently taught SS Design of Structures. At MSc level I have been responsible for teaching on an Advanced Structural Analysis option, a course in Bridge Engineering and in Prestressed Concrete Design. I also deliver lectures to some of the postgraduate engineering diplomas run by the department.

Administration

I am currently the Engineering School Safety Officer.

I am a college tutor in my 8th year.

I am currently the JS (3rd Year) coordinator in Civil Engineering.

I have acted as the JF (1st Year) and SF (2nd Year) coordinator in Civil Engineering.

I have acted as coordinator for the MSc in Civil Engineering.

Professional Experience

Projects

As indicated I have worked as a specialist advisory consultant in the design and assessment of bridges both in Ireland and Internationally. Below is a cross-section of projects.

2009 -

Ireland – Director Roughan O’Donovan Innovative Solutions (www.rod-is.ie)

Roughan & O’Donovan Innovative Solutions (ROD-IS) is a subsidiary company of Roughan & O’Donovan Consulting Engineers (ROD) specialising in complex and innovative structural and bridge engineering solutions for the international market. The company consists of a collaboration of Roughan & O’Donovan Consulting Engineers (ROD), Professor Eugene O’Brien (University College Dublin, Ireland) and Dr. Alan O’Connor (Trinity College Dublin, Ireland) and brings together over twenty years of research in bridge & structural engineering in the fields of loading, design and assessment. The purpose of *Roughan & O’Donovan Innovative Solutions* is to provide a consultancy outlet for this advanced research and to provide opportunities for Clients to avail of these innovative services for the design, assessment and whole life optimised management of new and existing infrastructure.

2010

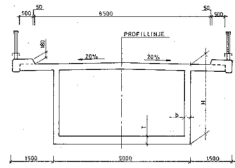


Ireland

In August 2009 two spans of the Malahide Railway in Dublin collapsed following scour failures of one of the supporting piers. Following structural repair a probabilistic assessment was commissioned by the owner to determine remaining life of the partially rehabilitated superstructure.

Client: Irish Rail

2010



Norway

Probabilistic assessment of the 214m Asmalsund post-tensioned box girder bridge in Southern Norway. Following failure to demonstrate sufficient load carrying capacity in a deterministic assessment, a probability based assessment was proposed to assess the safety of the structure under the prescribed loads to avoid extensive rehabilitation.

Client: The Norwegian Roads Authority

2009



Denmark

Probabilistic based safety assessment of the pedestrian walkway on Storstrøm Bridge. The reinforced concrete pedestrian walkway slab of the 3.2km long structure is seriously deteriorated. The purpose of this analysis was to predict the remaining life of the walkway under pedestrian plus maintenance vehicle load allowing for updating on the basis of inspection and repair. The assessment is based on advanced plastic analysis in combination with probabilistic analysis, where account was taken of the time dependent corrosion mechanisms on the basis of measurement and prediction.

2009



Denmark

Evaluation of load carrying capacity of 2 existing masonry arch railway bridges dating from 1912. Plastic analysis was employed to provide a load bearing capacity for the structures.

Client: Danish Railways

2008



Denmark

Safety assessment of composite structure on Koge Bugt Motorway outside Copenhagen. The structure was to be widened in line with expansion plans for the motorway. The strategy for widening, which included extension of existing steel beams, was designed as part of the project.

Client: Danish Road Directorate

2007



Denmark

Probabilistic based safety assessment of Storstrøm Bridge. The reinforced concrete deck slab of the 3.2km long structure is seriously deteriorated. The purpose of this analysis was to probabilistically assess the structures time varying safety. The assessment was based on advanced plastic analysis in combination with probabilistic analysis, where account was taken of the time dependent corrosion mechanisms employing Bayesian model updating from condition assessment results for the structure.

Client: Danish Road Directorate

2006

Sweden

Preparation of a proposal for a guideline for probability based assessment of existing railway structures. The guideline, to be the first in the world of its kind, for railway bridges, will describe in detail how to perform probability-based assessment in accordance with the requirements of Swedish Railways.

Client: Swedish Railway Administration.

2006

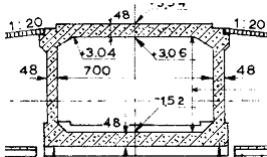


Sweden

Probabilistic assessment of the 200m Bergeforsen steel railway bridge in northern Sweden. A probability based assessment was performed to demonstrate that the structure has sufficient capacity for future changes in rolling stock characteristics. Saving €10 million.

Client: Swedish National Railways

2006



Holland

Probabilistic assessment of the Waarderdijk Bridge. The structure failed to demonstrate sufficient capacity following a deterministic assessment of its shear capacity. First principles 'crack slide' modeling was built into a probabilistic framework to evaluate the shear capacity. The analysis demonstrated that the structure had sufficient capacity in the ultimate limit state.

Saving €1 million.

Client: Dutch Ministry of Transport, Public Works and Water Management

2006



Ireland

Tender design on a 36 km motorway scheme. Category III checking of 6 principal structures on the Bundoran Ballyshannon Bypass Scheme (incl Cathleens Falls Bridge – pictured)

Contract Value: (Tender Design Structures) >€100 million.
(Design Check Structures) >€10 million.

Client: Irish National Roads Authority

2005

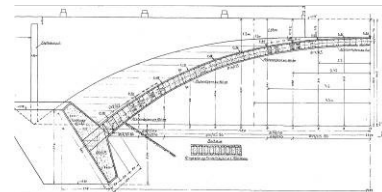


Denmark

Evaluation of load carrying capacity of 5 existing concrete bridges. The structures analyzed consisted of (a) two concrete slab structures dating from 1942, (b) a beam and slab structure dating from 1935, (c) a post-tensioned slab structure from 1959 and (d) a concrete arch structure from 1932. Advanced response modelling in combination with probabilistic methods was employed to demonstrate that the structures have sufficient capacity to carry the required assessment loading.

Saving €5 million.

Client: Danish Road Directorate



2004



Sweden

Deterministic assessment of the 200m Bergeforsen steel railway bridge in northern Sweden. The structure, which is from 1923, provides a vital link in the railway route along the Swedish eastern coast. Replacement would prove extremely costly and so advanced assessment techniques were employed at both the ultimate and fatigue limit states.

Saving €10 million.

Client: Swedish National Railways

2004



Denmark

Participation in preparation of Danish Roads Directorates “Guideline for Reliability Based Classification of the Load Carrying Capacity of Existing Bridges”. The guideline, the first in the world of its kind, describes in detail how a probability-based assessment of the load bearing capacity can be performed in accordance with the requirements for the safety level prescribed by the Danish Roads Directorate (DRD).

Client: Danish Road Directorate

2003



Denmark

Load carrying capacity assessment of 462m long Odde Sund Bro. The structure constructed in 1938 is composed of 6 x 34.5m side spans, 3 x 69m arch spans, a 34.5m bascule span and a 13.5m span. Plastic analysis was employed in combination with 3 d finite element modelling to demonstrate the load carrying capacity of the combined road/rail structure.

Client: Danish Road Directorate

2003



Denmark

Probabilistic based safety assessment of Klovtofte bridges near Copenhagen. The analysis performed incorporated probabilistic analysis, plastic analysis, and advanced finite element analysis. The safety of the Klovtofte bridges was found to be sufficient for the Danish Blue Motorway Network.

Saving €2 million.

Client: Danish Road Directorate

2003



Denmark

Probabilistic based safety assessment of Storstrøm Bridge. The reinforced concrete deck slab of the 3.2km long structure is seriously deteriorated. The purpose of this analysis is to initiate a safety based management plan for the deck. The assessment is based on advanced plastic analysis in combination with probabilistic analysis, where provisional account was taken of the time dependent corrosion mechanisms.

Client: Danish Road Directorate

2003



Denmark

Evaluation of load carrying capacity of 2 existing concrete arch railway bridges dating from 1917. Plastic analysis in combination with finite element modeling showed the structures to have sufficient capacity to carry the required codified loading.

Saving €1 million.

Client: Danish Railways

2003



Ireland

Development of a Finite Element shell model of the pivot support of the Samuel Beckett Cable Stayed Bridge in Dublin. The structure sits on the pivot in the closed position and it houses the lifting mechanism for the structure when it is required to open. The steel bridge designed by the Spanish architect/engineer Santiago Calatrava is a 126m span single pylon self-balancing cable stayed rotating road/rail/pedestrian Bridge. The budget provided by Dublin Corporation for the structure was >€20 million.

Client: Dublin City Council

2002



Ireland

Category III check of the contractors re-design of the Bridge Glen bridges on the South Eastern Motorway, Dublin. These two sister bridges of total length 158m were constructed by the incremental launch technique due to the environmentally sensitive nature of Brides Glen. The post tensioned concrete structures were composed of 10 hollow box units cast segmentally of depth 3.6 m with length varying from 15.3 to 16.4 m. The width of the top slab is 20.4 m. The cost of the structures was of the order of €11 million.

Client: Irish National Roads Authority

2001



Ireland

Preparation of a guidance document for the Irish National Roads Authority entitled “High Performance Concrete Bridge Beams – Recommendations on the Use of High Performance Concrete in Prestressed Pretensioned Bridge Beams in Design to BS5400” pp 45. The purpose of the report was to address the issues facing consulting engineers in the prescription of high performance/strength concrete beams.

Client: Irish National Roads Authority

2000

Ireland

Design of an integral bridge at Littlemills on the Dundalk Western Bypass. The single span underpass structure had a deck length of 24 m and width 30 m. The skew angle on the bridge was < 20°. The deck was constructed from precast U-beams with an in-situ slab. The abutments were 30m long and 7 m high, with wing walls of length 9 m. The abutments were cast on 600mm diameter piles. The Littlemills bridge cost was in excess of €1 million.

Client: Irish National Roads Authority

1996 - 1998

Trinity College Dublin, Ireland

Research fellow, Ph.D. student (TCD Foundation Fellowship Award)
Department of Structural Engineering. Research in structural safety assessment and probabilistic load modelling

Languges

	Speaking	Reading	Writing
Irish	Good	Good	Good
English	Fluent	Fluent	Fluent
Danish	Fluent	V. Good	V. Good

Referees

Prof. Mark Stewart Director, Centre for Infrastructure Performance and Reliability School of Engineering The University of Newcastle Newcastle, NSW 2308 Australia Ph: +61-2-4921-6027 email: mark.stewart@newcastle.edu.au	Prof. Eugene O'Brien School of Architecture, Landscape and Civil Engineering, University College Dublin, Newstead Building, Belfield, Dublin 4 Ireland Phone: +353-1-716-3224 email: eugene.obrien@ucd.ie
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Prof. Marios Chryssanthopoulos Professor of Structural Systems Head of Civil, Chemical and Environmental Engineering University of Surrey Guildford, Surrey, GU2 7XH UK Ph: +44-1483-686-632 email: mkchry@surrey.ac.uk	Dr. Ib Enevoldsen Head of Bridge Department Ramboll Consulting Engineers Bredevej 2 Virum DK-2830 Denmark Ph: +45-4598-6000 email: ibe@ramboll.dk
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Prof. Margaret O'Mahony
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Publications

Chapters/Articles in Books:

1. Jacob B., O'Brien E., O'Connor A. and Bouteldja, M., (2008), 'Proceedings of International Conference on Heavy Vehicles - HVPParis2008', (ICWIM5), Paris, May, ISTE/Hermes, London, pp 606.
2. Jacob B., O'Brien E., O'Connor A. and Bouteldja, M., (2008), 'Proceedings of International Conference on Heavy Vehicles - HVPParis2008', (HVTT10), Paris, May, ISTE/Hermes, London, pp 582.
3. Ni Nuallain N., O'Connor A., Gavin K., (2006), 'Proceedings of 3rd National Symposium on Bridge and Infrastructure Research in Ireland, BRI 06. Eds.
4. O'Connor, A.J., (2006), Chapter 3 – Safety Assessment, *Guideline for the Optimal Assessment of Highway Structures* – SAMARIS WP15 Final Report, Editor. A. Znidaric Office for Official Publications of the European Communities, pp 69.
5. O'Connor, A.J., (2003), Chapter 5 - Load Modelling, *Procedures Required for Assessing Highway Structures* - COST 345 Final Report, Eds. A. Znidaric and E.J. O'Brien, Office for Official Publications of the European Communities, pp 141.

Journal Publications (Published/In Press):

1. Znidaric A, Pakrashi V., O'Brien, E. and O'Connor A. (2010), 'A review of road structure data in Five European Countries', *ICE Journal of Urban Planning and Design*. In Press.
2. Sheils E., O'Connor A., Schoefs F., Breysse D., (2010), 'Investigation of the effect of the quality of inspection techniques on the optimal inspection interval for structures', *Structure and Infrastructure Engineering*. In Press.
3. Pakrashi V., O'Connor A., and Basu B., (2010), 'A Bridge – Vehicle Interaction Based Experimental Investigation of Damage Evolution', *Structural Health Monitoring*. doi:10.1177/1475921709352147
4. Sheils E., O'Connor A., Schoefs F., Breysse D., Yotte S., (2010), 'Development of a two stage inspection process for assessment of deteriorating infrastructure', *Reliability Engineering and System Safety*. **95(2010)**, pp. 182 - 194.
5. Pakrashi V., Basu B., and O'Connor A., (2009), 'Non-Detection, False Alarm and Calibration Insensitivity in Kurtosis and Pseudofractal Based Singularity Detection', *ASCE Journal of Aerospace Engineering*. **22(4)**, pp. 466 - 470.
6. O'Connor A., Pedersen C., Gustavsson L, Enevoldsen I., (2009), 'Probability based assessment and optimised maintenance planning for a large riveted truss railway bridge', *Structural Engineering International*. **19(4)**, pp. 375 - 383.
7. Pakrashi V., Basu B., and O'Connor A., (2009), 'A Statistical Measure for Wavelet Based Singularity Detection', *ASME Journal of Vibration and Acoustics*. **131(4)**, <http://dx.doi.org/10.1115/1.3142880>.
8. Pakrashi V., O'Connor A., and Basu B., (2009), 'A Comparative Analysis of Structural Damage Detection Techniques by Wavelet, Kurtosis and Pseudofractal Methods', *Structural Engineering and Mechanics*. **32(4)**, pp. 489 - 500.
9. Kenshel O. and O'Connor A., (2009), 'Assessing Chloride Induced Deterioration in Condition and Safety of Concrete Structures in Marine Environments', *European Journal of Environmental and Civil Engineering*, **13(5)**, pp. 593-612. doi:10.3166/ejece.13.593-613.
10. Breysse D, Elachachi S., Sheils E, Schoefs F and O'Connor A., (2009), 'Life cycle cost analysis of ageing structural components based on non destructive condition assessment'. *Australian Journal of Structural Engineering*. Special Issue devoted to International Forum on Engineering Decision. **9(1)**, pp. 55 - 66.

11. O'Connor A. and Enevoldsen I., (2009), 'Probability based assessment of bridges according to the new Danish guideline', *Structure and Infrastructure Engineering*, **5(2)**, pp. 157 - 168. doi: 10.1080/15732470601022955
12. Pakrashi V, Schoefs F, Memet J B and O' Connor A. (2008). "ROC Dependent Event Isolation Method for Image Processing Based Assessment of Corroded Harbour Structures". *Structure and Infrastructure Engineering*. **6(3)**, pp. 365 - 378. doi: 10.1080/1573 2470 7017 18072
13. Schoefs F, Breysse D, Sheils E and O' Connor A. (2008). "Efficacité de la maintenance conditionnelle sur des structures à dégradation aléatoire". (In French). *European Journal of Civil Engineering*, **12(9)**, pp. 1211- 1225. doi:10.3166/ejece.12.1211-1225
14. Pakrashi V., O'Connor A., and Basu B., (2008), 'Effects of Tuned Mass Dampers on Bridge-Vehicle Interaction for a Damaged Bridge', *Structure and Infrastructure Engineering*. doi: 10.1080/15732470701816850
15. O'Connor A. and Enevoldsen I., (2008), 'Probability based assessment of an existing prestressed post-tensioned concrete bridge', *Engineering Structures*, **30(2008)**, pp. 1408 - 1416.
16. O'Connor A. and Eichinger E., (2007), 'Site-Specific Traffic Load Modelling for Bridge Assessment', *ICE Journal of Bridge Engineering*. **160(4)**, pp. 185 - 194.
17. O'Connor A. and Enevoldsen I., (2007), 'Probability based bridge assessment', *ICE Journal of Bridge Engineering*, **160(3)**, pp. 129 - 137.
18. Pakrashi V., O'Connor A., and Basu B., (2007), 'A Study on the Effects of Damage Models and Wavelet Bases for Damage Identification and Calibration in Beams', *Journal of Computer Aided Civil and Infrastructure Engineering*. **22(8)**, pp. 555 - 569.
19. Pakrashi V., Basu B., and O'Connor A., (2007), 'Structural Damage Detection and Calibration using Wavelet Kurtosis Technique', *Engineering Structures*. **29(9)**, pp. 2097 - 2108.
20. O'Connor A. and O'Brien E., (2005), 'Mathematical Traffic Load Modelling and Factors Influencing the Accuracy of Predicted Extremes', *Canadian Journal of Civil Engineering*, **32(1)**, pp. 270 - 278.
21. O'Brien E., Znidaric A., Brady K., Gonzalez A. and O'Connor A., (2005), 'Procedures for the Assessment of Highway Structures', *ICE Transport Journal*, **158**, Issue TR1, pp 17 – 25.
22. O'Connor A., Jacob B, O'Brien E. and Prat M., (2001), 'Report of Current Studies Performed on Normal Load Model of EC1-Traffic Loads on Bridges', **5(4)**, *RFGC, Hermes Science Publications*. 2001, 411-434.
23. Caprez M., Doupal E., Jacob B., O'Connor A.J. and O'Brien E.J., (2000), 'Test of WIM Sensors and Systems on an Urban Road', *International Journal of Vehicle Design – Heavy Vehicle Systems*, **7**, Nos. 2/3 pp. 169 – 190.

Journal Publications (In Review):

1. O'Connor A., Sheils E., Breysse D. and Schoefs F., (2010), 'Incorporation of an initiation phase into Markov deterioration modelling', *Structural Safety*. In Review.
2. Farrell A., O'Connor A., Duffy L., Daly A., Kelly J. and Ryan P., (2010), 'Repair, Instrumentation and Monitoring of Ferrycarrig Bridge', *ICE Journal of Bridge Engineering*. In Review.
3. Pakrashi V., O'Connor A. and Basu B., (2010), 'Variation of Critical Speeds in Damaged Beam – Moving Oscillator Interaction. *Engineering Structures*. In Review.
4. Sheils E. and O'Connor A., (2010), 'Corrosion induced cracking – influence of cementitious additions on crack evolution', *ACI Structural Journal*. In Review.
5. Kenshel O. and O'Connor A., (2010), 'Structural reliability modeling of concrete bridges considering condition vs safety limit states', *Structure and Infrastructure Engineering*. In Review.

Conference Publications:

1. O'Dwyer D., O'Connor A. and Bashorun O., (2009), 'Assessing the probability of material failure in cantilevered stone stairs', Proceedings of the 7th International Probabilistic Workshop, Delft, November 25th – 26th, CDROM.
2. Enevoldsen I. and O'Connor A., (2009), 'Practical application of probability based assessment to bridges', 33rd IABSE Symposium, Bangkok, September 9th – 11th, CDROM.
3. Enevoldsen I., O'Connor A., Pedersen C., Gustavsson L. and Axhag F., (2009), 'Probability based assessment of a large riveted truss railway bridge', 33rd IABSE Symposium, Bangkok, September 9th – 11th, CDROM.
4. O'Connor A. and Enevoldsen I., (2009), 'European experience in probability based assessment of bridges', 7th AUSTRROADS Bridge Conference, Auckland, May 26th – 29th, CDROM.
5. O'Connor A. and Enevoldsen I., (2008), 'Probability based assessment of bridges', BCRI08, Galway, December 4th – 5th, pp 211 – 218.
6. O'Connor A. and Sheils E., (2008), 'Investigation of the effect of the quality of inspection techniques on the optimal inspection interval for structures', BCRI08, Galway, December 4th – 5th, pp 171 – 178.
7. Pakrashi V., Basu B. and O'Connor A., (2008), 'Critical speeds in damaged beam – moving oscillator interaction: the importance of inertial effects', BCRI08, Galway, December 4th – 5th, pp 103 – 110.
8. Farrell A., Duffy L., O'Connor A., Kelly J., (2008), 'Rehabilitation and Monitoring of Ferrycarrig bridge', BCRI08, Galway, December 4th – 5th, pp 143 – 150.
9. O'Connor A. and Kenshel O., (2008), 'Safety assessment of deteriorating concrete structures in marine environments', BCRI08, Galway, December 4th – 5th, pp 313 – 320.
10. O'Connor A., Pedersen C., Gustavsson L., Enevoldsen I., (2008), 'Probability based assessment of a large riveted truss railway bridge', Fourth International Conference on Bridge Maintenance, Safety and Management, IABMAS'08, Seoul, July 13-17. CDROM.
11. Bjerrum J., O'Connor A., Pedersen C., Enevoldsen I., (2008), 'Probability based assessment of motorway bridges in Denmark', Fourth International Conference on Bridge Maintenance, Safety and Management, IABMAS'08, Seoul, July 13-17. CDROM.
12. Farrell A., Duffy L., O'Connor A., Kelly J., (2008), 'Rehabilitation and Monitoring of a marine bridge in Ireland', Fourth International Conference on Bridge Maintenance, Safety and Management, IABMAS'08, Seoul, July 13-17. CDROM.
13. O'Connor A., Breysse D., Schoefs F., Sheils E., (2008), 'Minimisation of Structure Lifetime Cost Through Provision of a Two Stage Inspection Process', ASRANET08, Athens, June 25-28. CDROM.
14. O'Connor A., (2008), 'Application of WIM in Safety Assessment of Bridges', 5th International Conference on Weigh in Motion, Paris, May. CDROM.
15. O'Connor A. and Yotte S., (2008), 'MEDACHS (Marine Environment Damage to Atlantic Coast Historical and transport works or Structures) & Beyond', Transport Research Arena Europe, Ljubljana, April. CDROM.
16. Pakrashi V., O'Connor A., Breysse D., Schoefs F., (2008), 'Reliability based assessment of structures in marine environments', First International Conference on Construction Heritage in Coastal and Marine Environments, MEDACHS08, Lisbon, January. CDROM.
17. Pakrashi V., Breysse D., and O'Connor A., (2008), 'Effect of damage models in probabilistic assessment of structures – an illustrative example', First International Conference on Construction Heritage in Coastal and Marine Environments, MEDACHS08, Lisbon, January. CDROM.
18. Pakrashi V., Schoefs F. and O'Connor A., (2008), 'Improved image analysis based corrosion assessment using preprocessing techniques', First International Conference on Construction Heritage in Coastal and Marine Environments, MEDACHS08, Lisbon, January. CDROM.

19. Sheils E., O'Connor A., Schoefs F., Breyse D. and Yotte S., (2008), 'Comparing efficiency of systematic and controlled maintenance for randomly ageing components', *First International Conference on Construction Heritage in Coastal and Marine Environments, MEDACHS08*, Lisbon, January. CDROM.
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