

## CURRICULUM VITAE : David MUIR WOOD

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**Date of birth** 17 March 1949, Folkestone, Kent, England  
**Nationality** British  
**Family**  
*wife* Helen Rosamond (nationality : Canadian)  
*children* Alan Jamie (born 8 May 1980)  
Andrew Peter (born 25 May 1982)

### EDUCATION AND QUALIFICATIONS

Mar 2012 Fellow of the Royal Society of Edinburgh (FRSE)  
May 2010 International Honorary Member, Japanese Geotechnical Society  
Jul 1998 Fellow of the Royal Academy of Engineering (FREng)  
Sept 1992 Fellow of the Institution of Civil Engineers (FICE)  
Dec 1977 Member of the Institution of Civil Engineers (CEng, MICE)  
Oct 1970 - Sept 1973 Research student in soil mechanics, Engineering Department, Cambridge University : PhD 1974  
Oct 1967 - June 1970 Peterhouse, Cambridge: entrance scholarship  
Mechanical Sciences Tripos  
Part I (1969) Rex Moir Prize  
Part II (1970) Archibald Denny Prize  
BA 1970; MA 1974  
Sept 1959 - Dec 1966 Royal Grammar School, High Wycombe

### Languages

Norwegian (good), French (good), Italian (moderate)

### CURRENT APPOINTMENTS

since Apr 2014 Emeritus Professor of Geotechnical Engineering, University of Dundee  
since Jan 2014 Professor affilierad i geoteknik, Chalmers tekniska högskola, Institutionen för bygg- och miljöteknik  
since Aug 2009 Emeritus Professor of Civil Engineering, University of Bristol

### Other positions held

since April 2002 Associate Editor, Canadian Geotechnical Journal  
since Oct 2000 Member, Editorial Advisory Board, International Journal for Numerical and Analytical Methods in Geomechanics (incorporating Mechanics of Cohesive-Frictional Materials)  
since Sept 1997 Overseas editor, Soils and Foundations (Japanese Geotechnical Society)  
since Sept 1997 Member, editorial board, Rivista italiana di geotecnica  
since Jan 1996 Member of editorial board, Journal of Earthquake Engineering  
since Jan 1989 Member of editorial board of Computers and Geotechnics  
since Jan 1983 Associate, Geotechnical Consulting Group

### Previous employment etc

Jan – Dec 2013 Martin Fahey Visiting Professor, Centre for Offshore Foundation Systems, UWA, Perth  
Sept 2009-Feb 2014 Professor of Geotechnical Engineering, University of Dundee (50%)  
Aug 1995-July 2009 Professor of civil engineering, University of Bristol  
Apr – May 2008 JSPS Visiting Fellow, Nagoya Institute of Technology  
Aug 2003 – Jul 2007 Dean, Faculty of Engineering, University of Bristol  
Apr – Jun 2003 Foundation for the Promotion of Industrial Science Visiting Professor, Institute for Industrial Science, University of Tokyo  
July 2000 MTS Visiting Professor of Geomechanics, University of Minnesota  
Sept 1997 Visiting research scholar, Faculty of Engineering, Tokyo Institute of Technology  
Aug 1997 – Sept 2002 Head, Department of Civil Engineering, University of Bristol  
Jan 1995 - Dec 1996 Royal Society Industry Fellow, Babcie Group  
Sept 1994 Visiting Fellow, Japan Society for the Promotion of Science  
Sept 1993 - July 1994 Dean, Faculty of Engineering, Glasgow University

July 1991 - June 1993	Head, Department of Civil Engineering, Glasgow University
Sept 1987 - July 1995	Cormack professor of civil engineering, University of Glasgow
Apr 1986 - Sept 1986	visiting research associate; University of Colorado, Boulder
Oct 1978 - Aug 1987	University lecturer in soil mechanics; Cambridge University Engineering Department
Mar 1978 - Sept 1978	Geotechnical engineer; Scott, Wilson, Kirkpatrick and Partners, Hong Kong : geotechnical checking of slopes
Oct 1975 - Sept 1978	University demonstrator in soil mechanics, Cambridge University Engineering Department
Oct 1975 - Aug 1987	Fellow of Emmanuel College, Cambridge
Jan 1975 - Sept 1975	Royal Society Research Fellow, Norwegian Geotechnical Institute, Oslo
Oct 1973 - Sept 1975	William Stone Research Fellow, Peterhouse, Cambridge

### **Other positions previously held**

Oct 2009- Dec 2013	Editor, International Journal for Physical Modelling in Geotechnics
Sept 1992 - July 1994	Chairman, Geotechnics and Pavement Engineering Group, Environmental and Civil Engineering Committee, Engineering Board, Science and Engineering Research Council/Engineering and Physical Sciences Research Council
Feb 1992 - Mar 1994	Member/Chairman of Education and Training Panel, Construction and Environmental Civil Engineering Committee, Science and Engineering Research Council
Sept 1991 - July 1994	Member of Environmental and Civil Engineering Committee, Engineering Board, Science and Engineering Research Council/Engineering and Physical Sciences Research Council
May 1991 - July 1994	Chairman, SERC Bothkennar Soft Clay Site Management Committee
Apr 1991 - Aug 1993	Chairman, Scottish Geotechnical Group
Jan 1991 - Dec 1993	Honorary Editor of <i>Géotechnique</i> and Chairman of Advisory Panel
Sept 1990 - Aug 1991	Member of Geotechnics and Pavement Engineering Subcommittee, Science and Engineering Research Council
Jan 1984 - Dec 1986	Member of Committee of British Geotechnical Society
Jan 1982 - Dec 1984	Member of <i>Géotechnique</i> editorial advisory panel

### **PROFESSIONAL SOCIETIES**

Fellow of Institution of Civil Engineers  
Member of Smeatonian Society of Civil Engineers  
Member of British Geotechnical Association  
Member of Remote Sensing and Photogrammetry Society

## STATEMENT

My research has spanned the continuum from laboratory testing, through development of constitutive models for soils, to analysis of soil:structure interaction and response of geotechnical systems. My concern, through my research, my teaching, and my writing has been to develop a hierarchy of soil models which can be clearly linked with physical observations of modes of soil response and which can be accessible to practising engineers. The modelling is informed by experimental observation.

Conventional testing of geotechnical materials concentrates on axial symmetry – confined one-dimensional loading. I have sought to extend the range of exploration of stress and strain space using devices which permit independent variation and control of all three principal stresses and which permit controlled rotation of principal axes. Thus I have been testing with a true triaxial apparatus since 1970, conducted a series of research projects with the simple shear apparatus and assembled in Bristol a unique group of apparatus: rigid boundary true triaxial, flexible boundary cubical cell (Boulder design), and torsional hollow cylinder apparatus (Imperial College design).

Soil:structure interaction is controlled by stiffness properties. Constitutive modelling has recognised the need to describe using plasticity models regions of response that were classically regarded as elastic. Such improved modelling capability is particularly important for stress paths which involve non-monotonic loading, of which the paths followed by soil elements subjected to seismic or cyclic loading provide an obvious example. This modelling has been assisted by developments in laboratory instrumentation: higher resolution of deformation measurement allows small-strain nonlinearities to be reliably detected (at shear strain levels below 0.001%); laboratory geophysics using piezoceramic ‘bender’ elements is proving useful in assessing evolution of stiffness anisotropy from measurements of shear wave velocities. Bristol research has shown how a simple modification can use the same piezoceramic device to transmit both shear and compression waves. Incorporation of these devices in the flexible boundary cubical cell is allowing us to monitor, in an essentially non-destructive way, the evolution of all terms of the anisotropic pseudoelastic stiffness matrix under multiaxial stress states. This was the subject of a recently concluded EPSRC research project jointly with Bristol University (experimental studies) and Imperial College (numerical studies using Discrete Element Modelling) to discover the way in which waves travel through granular materials, and the extent to which standard elastic interpretations have validity. Exactly the same system (apparatus size, particle size and shape) has been used for the experimental and numerical research. However, the closer one studies the propagation of disturbances through granular materials the more complicated the response becomes and the scaling from particle to continuum is not straightforward.

Collaboration with Nagoya Institute of Technology has enabled progress on extending our models of soils to incorporate effects of changing grading, prompted by consulting work with BCHydro concerning a large dam in which fine material is being transported out of the core. The modelling is now being supported by experimental studies of the effect of dissolution of particles from a mixture. The early stages of this modelling were described in the 20<sup>th</sup> Bjerrum Lecture delivered in Oslo in November 2005. Combined experimental and theoretical study of internal erosion of soils is the theme of a project proposal submitted to the Australian Research Council by Adrian Russell (University of New South Wales), for which I am a partner investigator.

Collaboration with the Polish Academy of Sciences (Gdansk), with Laboratoire 3S/R in Grenoble, and with Technical University of Delft is supporting studies of stress distributions and displacement patterns within granular materials using photoelastic and particle image velocimetry techniques. These studies reveal patterns of internal deformation which are important for consideration of the particle-continuum duality of soils and other granular materials. Analysis, and observation, of the effect of passing polarised light through particles under stress has demonstrated that the patterns seen are closely linked to the thickness of sample. The study of the interpretation

of stress using polarised light and granular assemblies is continuing with Jelke Dijkstra at Chalmers Technical University, Gothenburg.

I led an extensive experimental programme at Bristol on the effect of adding flexible fibres to soils. A rational route to the incorporation of the effects of the fibres in a constitutive model has been developed. This modelling is now being applied to the effects of plant roots on soil reinforcement at Dundee, in collaboration with the former Scottish Crop Research Institute, through laboratory shear tests and tests on model geotechnical systems. This formed the subject of the 19<sup>th</sup> Prague Geotechnical Lecture, delivered in May 2011.

Subtle models have their place in geotechnical computer analysis but it is vital that engineers recognise the importance of Step 0 – before embarking on numerical analysis, *write down the answer!*. For many apparently complex situations, simplified analyses, capable of ‘back-of-the-envelope’ solution, can be devised. This theme, applied to the hydro-chemo-mechanical coupling in the hydration of cement/backfill mixtures for stabilising mine-workings, has formed part of collaborative research with James Doherty (University of Western Australia).

No degree of sophistication of constitutive modelling can escape the facts that real soils are variable and unpredictable and that the models that we use are imperfect. Observational techniques have been used for a long time to feed controlled response to geotechnical uncertainty. An EPSRC project at Bristol, with 10 industrial partners, developed process models for projects adopting an observational method. Such studies very rapidly reveal that uncertainty in human factors is as important as, if not more important than, geotechnical uncertainty. Next stages require sympathetic collaboration with behavioural and social scientists.

I have written four books. *Soil behaviour and critical state soil mechanics* (1990) emerged from courses on ‘critical state soil mechanics’ delivered to industrial audiences with the late Professor Peter Wroth and others: critical state soil mechanics rationalises the description of strength and deformation of soils by insisting on inclusion of density and stresses in all stages of modelling. *Geotechnical modelling* (2004) was prompted by the two years that I spent with Babcoc Group as a Royal Society Industry Fellow, and defines a ‘syllabus’ of the various modelling possibilities (constitutive, numerical, physical, theoretical) of which practising engineers should be aware. *Soil mechanics: a one-dimensional introduction* (2009) contains material used for first year teaching at Bristol, and links introduction to the mechanics of soils with other teaching that first year civil engineers will typically encounter. *Civil engineering: a very short introduction* was published by Oxford University Press in 2012.

## PUBLICATIONS

### Journal papers

- Wood, DM (1975) Explorations of principal stress space with kaolin in a true triaxial apparatus. *Géotechnique* **25** 4, 783-797
- Wood, DM and Wroth, CP (1977) Some laboratory experiments related to the results of pressuremeter tests. *Géotechnique* **27** 2, 181-201
- Nova, R and Wood, DM (1978) An experimental programme to define the yield function for sand. *Soils and Foundations* **18** 4, 77-86
- Wood, DM and Wroth, CP (1978) The use of the cone penetrometer to determine the plastic limit of soils. *Ground Engineering* **11** 3, 37
- Wroth, CP and Wood, DM (1978) The correlation of index properties with some basic engineering properties of soils. *Canadian Geotechnical Journal* **15** 2, 137-145 (awarded 1978 British Geotechnical Society Prize)
- Nova, R and Wood, DM (1979) A constitutive model for sand. *Int. J. for Numerical and Analytical Methods in Geomechanics* **3** 3, 255-278
- Wood, DM, Drescher, A and Budhu, M (1979) On the determination of the stress state in the simple shear apparatus. *Geotechnical Testing Journal, ASTM* **2** 4, 211-222
- Wood, DM (1980) Yielding in soft clay at Bäckebol, Sweden. *Géotechnique* **30** 1, 49-65
- Wood, DM (1981) To chunam or not to chunam : Interaction of politics and slope stability. *Ground Engineering* **14** 1, 28-30
- Wood, DM (1982) Cone penetrometer and liquid limit. *Géotechnique* **32** 2, 152-157
- Wood, DM (1984) Circular load on elastic layer. *Int. J. for Numerical and Analytical Methods in Geomechanics* **8** 5, 503-509
- Wood, DM (1984) On stress parameters. *Géotechnique* **34** 2, 282-287
- Clausen, C-JF, Graham, J and Wood, DM (1984) Yielding in soft clay at Mastemyr, Norway. *Géotechnique* **34** 4, 581-600
- Wood, DM (1985) Some fall-cone tests. *Géotechnique* **35** 1, 64-68
- Airey, DW and Wood, DM (1986) Pore pressures in simple shear. *Soils and Foundations* **26** 2, 91-96
- Airey, DW and Wood, DM (1987) An evaluation of direct simple shear tests on clay. *Géotechnique* **37** 1, 25-35
- Al-Tabbaa, A and Muir Wood, D (1987) Some measurements of the permeability of kaolin. *Géotechnique* **37** 4, 499-503.
- Muir Wood, D (1990) Strain dependent moduli and pressuremeter tests, *Géotechnique* **40** 3, 509-512.
- Muir Wood, D and Graham, J (1990) Anisotropic elasticity and yielding of a natural plastic clay. *J. of Plasticity* **6** 4, 377-388.
- Al-Tabbaa, A and Muir Wood, D (1991) Horizontal drainage during consolidation : insights gained from analyses of a simple problem. *Géotechnique* **41** 4, 571-585.
- Muir Wood, D (1991) Strength ratio, pore pressure parameter and effective stress change. *Soils and Foundations* **31** 4, 194-199.
- Balasubramaniam, AS, Handali, S and Muir Wood, D (1992) Pore pressure:stress ratio relationship for soft Bangkok clay. *Soils and Foundations* **32** 1, 117-131.
- Little, JA, Muir Wood, D, Paul, MA and Bouazza, A (1992) Some laboratory measurements of permeability of Bothkennar clay in relation to soil fabric. *Géotechnique* **42** 2, 355-361.
- Stone, KJL and Muir Wood, D (1992) Effects of dilatancy and particle size observed in model tests on sand. *Soils and Foundations* **32** 4, 43-57.
- Muir Wood, D, Belkheir, K and Liu, DF (1994) Strain-softening and state parameter for sand modelling. *Géotechnique* **44** 2, 335-339.
- Meadows, PS, Muir Wood, D, Meadows, A and Murray, JMH (1994) Microbiological effects on slope stability : an experimental study. *Sedimentology* **41** 3, 423-435.
- Nakai, T, Stone, KJL and Muir Wood, D (1995) Numerical calculations of soil response over a displacing basement. *Soils and Foundations* **35** 2, 25-35.
- Muir Wood, D (1997) Talking point. *Ground Engineering* **30** 3, 3.
- Muir Wood, D (1997) A case for higher quality geotechnical tests. *Building, Trade and Industry* **13** 6, 39.
- Muir Wood, D (1998) Permanent soil deformations after earthquakes - implications for design: Introduction. *Geotechnical Engineering, Proc. ICE* **131** 1, 1-3.
- Muir Wood, D (1998) Talking point. *Ground Engineering* **31** 6, 3.
- Muir Wood, D (1998) Life cycles of granular materials. *Phil. Trans. Roy. Soc. London* **A356**:1747:2453-2470
- Gajo, A and Muir Wood, D (1999) A kinematic hardening constitutive model for sands: the multiaxial formulation. *International Journal for Numerical and Analytical Methods in Geomechanics* **23** 925-965.
- Gajo, A and Muir Wood, D (1999) Severn-Trent sand: a kinematic hardening constitutive model for sands: the q-p formulation. *Géotechnique* **49** 5, 595-614.
- Muir Wood, D (1999) Viewpoint: Technological advances in civil engineering. *Intelligence* **2**, 4 (ISSN 1461-0469)
- Kumar, GV and Muir Wood, D (1999) Fall-cone and compression tests on clay-gravel mixtures. *Géotechnique* **49** 6, 727-739
- Rouainia, M and Muir Wood, D (2000) A kinematic hardening constitutive model for natural clays with loss of structure. *Géotechnique* **50** 2, 153-164.
- Murray, JMH, Meadows, PS, Meadows, A, West, FJC and Muir Wood, D (2000) Micro-scale geotechnical variability in continental slope and abyssal sediments influenced by the oxygen minimum zone in the Arabian Sea. *Deep-sea research Part II*, **47** 1/2, 281-301 (ISSN 0937 0645).

- LeMasurier, J, Blockley, DI and Muir Wood, D (2000) Management of value and uncertainty in construction projects. *Journal of Construction Research* **2** 1, 123-129 (ISBN 962-7723-20-7).
- Muir Wood, D and Kumar, GV (2000) Experimental observations of behaviour of heterogeneous soils. *Mechanics of Cohesive-Frictional Materials* **5** 5,373-398.
- Rouainia, M and Muir Wood, D (2000) An implicit constitutive algorithm for finite strain Cam-clay elasto-plastic model. *Mechanics of Cohesive-Frictional Materials* **5** 6, 469-489.
- Muir Wood, D and Nash, DFT (2000) Earth pressures on an integral bridge abutment: a numerical case study. *Soils and Foundations* **40** 6, 23-38.
- Muir Wood, D, Hu, W, and Nash, DFT (2000) Group effects in stone column foundations: model tests *Géotechnique* **50** 6, 689-698.
- Gajo, A and Muir Wood, D (2001) A new approach to anisotropic, bounding surface plasticity: general formulation and simulations of natural and reconstituted clay behaviour. *International Journal for Numerical and Analytical Methods in Geomechanics* **25** 3, 207-241.
- Rouainia, M and Muir Wood, D (2001) Implicit numerical integration for a kinematic hardening soil plasticity model *International Journal for Numerical and Analytical Methods in Geomechanics* **25** 13, 1305-1325.
- Muir Wood, D, Crewe, AJ and Taylor, CA (2002) Shaking table testing of geotechnical models. *International Journal of Physical Modelling in Geotechnics* **2** 1, 1-13
- Muir Wood, D (2002) Some observations of volumetric instabilities in soils. *IUTAM Symposium on Material instabilities and the effect of microstructure*, Austin, Texas: May 2001 *International Journal of Solids and Structures* **39** 13-14, 3429-3449
- Callisto, L, Gajo, A and Muir Wood, D (2002) Simulation of stress probe tests on natural and reconstituted Pisa clay *Géotechnique* **52** 9, 649-666
- Renaud, J-P, Anderson, MG, Wilkinson, PL, Lloyd, DM & Muir Wood, D (2003) The importance of visualisation of results from slope stability analysis. *Geotechnical Engineering, Proc ICE* **156** 1, 27-33.
- Arroyo, M, Muir Wood, D & Greening, PD (2003) Source near-field effects and pulse tests in soil samples. *Géotechnique* **53** 3, 337-345
- Arroyo, M, Greening, PD & Muir Wood, D (2003) An estimate of uncertainty in current laboratory pulse test practice. *Rivista italiana di geotecnica* **37** 1, 38-56
- Muir Wood, D (2004) Experimental inspiration for kinematic hardening soil models. *Journal of Engineering Mechanics, ASCE* **130** 6, 656-664
- Gajo, A, Bigoni, D & Muir Wood, D (2004) Multiple shear band development and related instabilities in granular materials. *Journal of the Mechanics and Physics of Solids* **52** 2683-2724.
- Dihoru, L, Muir Wood, D, Sadek, T & Lings, ML (2005) A neural network for error prediction in a true triaxial apparatus with flexible boundaries. *Computers and Geotechnics* **32** 59-71.
- Rouainia, M & Muir Wood, D (2006) Computational aspects in finite strain plasticity analysis of geotechnical materials. *Mechanics Research Communications* **33** 123-133.
- Arroyo, M, Muir Wood, D, Greening, PD, Medina, L & Rio, J (2006) Effects of sample size on bender-based axial  $G_0$  measurements. *Géotechnique* **56** 1, 39-52.
- LeMasurier, J, Blockley, DI & Muir Wood, D (2006) An observational model for managing risk. *Civil Engineering, Proc ICE* **159** Special issue 2, 35-40.
- Gajo, A, Muir Wood, D & Bigoni, D (2007) On certain critical material and testing characteristics affecting shear band development in sand. *Géotechnique* **57** 5, 449-461
- Diambra, A, Russell, AR, Ibrahim, E & Muir Wood, D (2007) Determination of fibre orientation in reinforced sands. *Géotechnique* **57** 7, 623-628
- Muir Wood, D (2007) The magic of sands – The 20th Bjerrum Lecture presented in Oslo 25 November 2005 *Canadian Geotechnical Journal* **44** 11, 1329-1350
- Sadek, T, Lings, ML, Dihoru, L & Muir Wood, D (2007) Wave transmission in Hostun sand: multiaxial experiments. *Rivista Italiana di Geotecnica* **41** 2, 69-84
- Muir Wood, D & Maeda, K (2008) Changing grading of soil: effect on critical states. *Acta Geotechnica* **3** 1, 3-14
- Pitilakis, D, Dietz, M, Muir Wood, D, Clouteau, D & Modaressi, A (2008) Numerical simulation of dynamic soil-structure interaction in shaking table testing. *Soil Dynamics and Earthquake Engineering* **28** 6, 453-467)
- Jafarzadeh, F, Javaheri, H, Sadek, T & Muir Wood, D (2008) Simulation of anisotropic deviatoric response of Hostun sand in true triaxial tests. *Computers and Geotechnics* **35** 703-718
- Muir Wood, D & Johansson, J (2008) Interaction of flexible structures with moving ground. *Rivista Italiana di Geotecnica* **42** 2, 31-43
- Gill, JA, Muir Wood, D, Blockley, DI & Sellin, RHJ (2008) Sir Alfred Pugsley, OBE, FEng, FRS. (1903 – 1998) – his legacy. *Proc. ICE, Bridge Engineering* **162** BE1, 15-24.
- Russell, AR & Muir Wood, D (2009) Point load tests and strength measurements for brittle spheres. *International Journal of Rock Mechanics and Mining Sciences* **46** 2, 272-280
- Russell, AR, Muir Wood, D and Kikumoto, M (2009) Crushing induced yield in idealised granular assemblies. *Journal of the Mechanics and Physics of Solids*, **57** 1293-1313.
- Muir Wood, D (2009) Sir Alan Muir Wood: Obituary. *Proc ICE, Geotechnical Engineering* **162** 4, 239-241
- Lesniewska, D and Muir Wood, D (2009) Observations of stresses and strains in a granular material. *J Engineering Mechanics, ASCE* **135** 9, 1038-1054.
- Abate, G, Massimino, MR, Maugeri, M & Muir Wood, D (2009) Numerical modelling of a shaking table test for soil-foundation-superstructure interaction by means of a soil constitutive model implemented in a FEM code. *Geotechnical and Geological Engineering* DOI 10.1007/s10706-009-9275-y

- Russell, AR and Muir Wood, D (2010) A comparison of critical state models for sand under conditions of axial symmetry. *Geotechnique* **60** 2, 133-140.
- Muir Wood, D and Mair, RJ (2010) Sir Alan Muir Wood: Obituary. *Geotechnique* **60** 2, 153-156.
- Ibraim, E, Lanier, J, Muir Wood, D and Viggiani, C (2010) Strain path controlled shear tests on an analogue granular material. *Geotechnique* DOI: 10.1680/geot.8.P.100, **60** 7, 545-559.
- Hall, S, Muir Wood, D, Ibraim, E, and Viggiani, C (2010) Localised deformation patterning in 2D granular materials revealed by digital image correlation. *Granular matter* 10.1007/s10035-009-0155-1, **12** (1), 1-14.
- Diambra, A, Ibraim, E, Muir Wood, D and Russell, AR (2010) Fibre reinforced sands: experiments and modelling. *Geotextiles and geomembranes* **28** 3, 238-250.
- Muir Wood, D, Maeda, K & Nukudani, E (2010) Modelling mechanical consequences of erosion. *Geotechnique* **60** 6, 447-457.
- Ibraim, E, Diambra, A, Muir Wood, D & Russell, AR (2010) Static liquefaction of fibre-reinforced sand under monotonic loading. *Geotextiles and Geomembranes* **28** 4, 374-385.
- Kikumoto, M, Muir Wood, D & Russell, AR (2010) Particle crushing and deformation behaviour. *Soils and Foundations* **50** 4, 547-563
- Muir Wood, D and Lesniewska, D (2010) Stresses in granular materials. *Granular Matter* DOI: 10.1007/s10035-010-0237-0 (2011) **13** 4, 395-415
- Lesniewska, D and Muir Wood, D (2011) Photoelastic and photographic study of a granular material. *Géotechnique* **61** 7, 605-611
- Diambra, A, Ibraim, E, Russell, AR & Muir Wood, D (2011) Modelling the undrained response of fibre reinforced sands. *Soils & Foundations* **51** 4, 625-636
- S Bhattacharya, D Lombardi, DMuir Wood (2011) Similitude relationships for physical modelling of monopile-supported offshore wind turbines *International Journal of Physical Modelling in Geotechnics* **11** 2, 58-68
- Cavarretta, I, O'Sullivan, C, Ibraim, E, Lings, ML, Hamlin, S and Muir Wood, D (2012) Characterization of artificial spherical particles for DEM validation studies. *Particuology* <http://dx.doi.org/10.1016/j.partic.2011.10.007>,
- Muir Wood, D. (2012) Heterogeneity and soil element testing, *Géotechnique Letters* **2** 4, 101-106
- Doherty, J.P., Alguire, H. and Muir Wood, D. (2012) Evaluating modified Cam clay parameters from undrained triaxial compression data using targeted optimisation, *Canadian Geotechnical Journal* **49** 11, 1285-1292 (10.1139/t2012-088) (Editor's choice: January 2013)
- Panayides, S., Rouainia, M. and Muir Wood, D. (2012) The influence of degradation of structure on the behaviour of a full scale embankment, *Canadian Geotechnical Journal* **49** 3, 344-356.
- Ibraim, E., Diambra, A., Russell, A.R. and Muir Wood, D. (2012) Assessment of laboratory sample preparation for fibre reinforced sands, *Geotextiles and Geomembranes* **34** 69-79.
- Lombardi, Domenico, Bhattacharya, Subhamoy and Muir Wood, David (2013) Dynamic soil-structure interaction of monopile supported wind turbines in cohesive soil. *Soil Dynamics and Earthquake Engineering*, **49** 06.2013, 165-180.
- Diambra, A., Ibraim, E., Russell, A.R. and Muir Wood, D. (2013) Fibre reinforced sands: from experiments to modelling and beyond, *International Journal for Numerical and Analytical Methods in Geomechanics* **37** 15, 2427-2455.
- Subhamoy Bhattacharya, James A. Cox, Domenico Lombardi, David Muir Wood (2013) Dynamics of offshore wind turbines supported on two foundations. *Proceedings of the Institution of Civil Engineers, Geotechnical Engineering* **166** GE2, 159-169 <http://dx.doi.org/10.1680/geng.11.00015>
- Doherty, J.P. and Muir Wood, D. (2013) An extended Mohr-Coulomb (EMC) model for predicting the settlement of shallow foundations on sand, *Géotechnique* [10.1680/geot.12.P.008](http://dx.doi.org/10.1680/geot.12.P.008) **63** 8, 661-673.
- Bhattacharya, S., Nikitas, N., Garnsey, J., Alexander, N.A., Cox, J., Lombardi, D., Muir Wood, D. and Nash D.F.T. (2013) Observed dynamic soil-structure interaction in scale testing of offshore wind turbine foundations, *Soil Dynamics and Earthquake Engineering* **54** 47-60.
- Panayides, S., Rouainia, M. and Muir Wood, D. (2012) Assessing the three-dimensional behaviour of a trial embankment founded on structured soil, *Géotechnique* (under review)

## Books

- Wood, DM (1974) *Some aspects of the mechanical behaviour of kaolin under truly triaxial conditions of stress and strain*. PhD thesis, Cambridge University
- George, PJ and Wood, DM (editors) (1976) *Offshore Soil Mechanics* Lloyd's Register of Shipping and Cambridge University Engineering Department
- Mair, RJ and Muir Wood, D (1987) *Pressuremeter testing : Methods and interpretation*, CIRIA Ground Engineering Report: In-situ testing, CIRIA and Butterworths (160pp)
- Leroueil, S, Magnan, JP and Tavenas, F (translated Muir Wood, D, 1990) *Embankments on soft clays*. Ellis Horwood Ltd., Chichester (360pp).
- Muir Wood, D (1990) *Soil behaviour and critical state soil mechanics*. Cambridge University Press (462pp)
- Muir Wood, D, Boulton, GS and Rotter, JM (eds) (1998) *Mechanics of granular materials in engineering and earth sciences*. Phil. Trans. Roy. Soc. London **A356** number 1747, pages 2449-2782
- Gannon, JA, Masterton, GGT, Wallace, WA and Muir Wood, D (1999) *Piled foundations in weak rock*. CIRIA (140pp) ISBN0 86017 494 8
- Muir Wood, D (2004) *Geotechnical modelling*. E. & F.N. Spon (488pp)
- Muir Wood, D (2005) *The magic of sands: 20th Bjerrum Lecture*, Laurits Bjerrums Minnefond, Norsk Geoteknisk Forening, Oslo

Muir Wood, D (2009) *Soil mechanics: a one-dimensional introduction*. Cambridge University Press (240pp)  
 Di Prisco, C & Muir Wood, D (eds) (2012) *Mechanical behaviours of soils under environmentally induced cyclic loads*.  
 International Centre for Mechanical Sciences (CISM), Courses and lectures 534, Springer, Wien/New York.  
 Muir Wood, D (2012) *Civil engineering: a very short introduction*. Oxford University Press

### Invited chapters in books/conferences

- Wood, DM (1973) Truly triaxial stress-strain behaviour of kaolin. *Proc. Symp. on Role of plasticity in soil mechanics*, Cambridge 67-93
- Wood, DM (1976) Shear testing of soil. in *Offshore soil mechanics* (eds PJ George and DM Wood) Lloyd's Register of Shipping and Cambridge University Engineering Department 15-30
- Wood, DM (1976) Idealisation of stress-strain behaviour. in *Offshore soil mechanics* (eds PJ George and DM Wood) Lloyd's Register of Shipping and Cambridge University Engineering Department 45-59
- Wood, DM (1976) Cyclic loading of soil samples. in *Offshore soil mechanics* (eds PJ George and DM Wood) Lloyd's Register of Shipping and Cambridge University Engineering Department 363-387
- Wood, DM (1977) X-rays, load cells and computers. *Seminar on Developments in laboratory testing of soils*, University of Surrey 39-47
- Wood, DM and Wroth, CP (1980) Rocks and soils under different pressure regimes. *Proc. Int. Conf. on Geotechnical and Environmental Aspects of Geopressure Energy*, Sea Island, Georgia (Engineering Foundation) 139-152
- Wood, DM (1982) Laboratory investigations of the behaviour of soils under cyclic loading : A review. Chap 10 in *Soil mechanics - transient and cyclic loads* (eds GN Pande and OC Zienkiewicz) John Wiley and Sons 513-582
- Wood, DM (1983) Choice of models for geotechnical predictions. *Proc. Int. Conf. on Constitutive laws for engineering materials : Theory and applications* (eds CS Desai and RH Gallagher) Tucson, Arizona 603-604
- Wood, DM (1984) Choice of models for geotechnical predictions. Chap 32 in *Mechanics of engineering materials* (eds CS Desai and RH Gallagher) John Wiley and Sons 633-654
- Houlsby, GT, Wroth, CP and Wood, DM (1984) Predictions of the results of laboratory tests on a clay using a critical state model. in *Constitutive relations for soils* (eds G Gudehus, F Darve and I Vardoulakis) A.A. Balkema, Rotterdam 99-121
- Airey, DW, Budhu, M and Wood, DM (1985) Some aspects of the behaviour of soils in simple shear. Chap. 6 in *Developments in soil mechanics and foundation engineering - 2* (eds PK Banerjee and R Butterfield) Elsevier Applied Science Publishers 185-213
- Wood, DM (1986) Index properties and critical state soil mechanics. in *Recent developments in laboratory and field tests and analysis of geotechnical problems* (eds AS Balasubramaniam, S Chandra and DT Bergado) A.A. Balkema, Rotterdam 309-331
- Klisinski, M, Alawi, MM, Sture, S, Ko, H-Y and Muir Wood, D (1988) Elasto-plastic model for sand based on fuzzy sets. *Constitutive equations for granular non-cohesive soils* (eds AS Saada and G Bianchini) A.A. Balkema, Rotterdam 325-347.
- Stone, KJL and Muir Wood, D (1989) Studies relating to faulting in abyssal plain sediments. Chap 16 in *Disposal of radioactive waste in seabed sediments* (ed TJ Freeman) (Proc. Int. Conf., Oxford, Society for Underwater Technology, Sept. 1988) Advances in underwater technology, ocean science and offshore engineering, Graham & Trotman Ltd, London 18, 273-288.
- Muir Wood, D (1991) Approaches to modelling the cyclic stress-strain behaviour of soils, Chap 2 in *Cyclic loading of soils : from theory to design* (eds MP O'Reilly and SF Brown) Blackie, Glasgow 19-69.
- Muir Wood, D (1991) Summing up, in *Quaternary engineering geology* (Proc. 25th Annual Conf. of the Engineering Group of the Geological Society, Edinburgh, Sept. 1989)(eds A Forster, MG Culshaw, JC Cripps, JA Little and CF Moon) Geological Society, Eng. Geology Special Publication No 7, 713-715.
- Yudhbir and Muir Wood, D (1992) General report, Discussion session 1, Recent developments in laboratory strength and deformation testing. *Proc. 12th Int. Conf. on Soil Mechs and Foundation Engineering*, Rio de Janeiro, August 1989 (A.A. Balkema, Rotterdam) 4 2303-2337.
- Chan, AHC, Famiyesin, OO and Muir Wood, D (1993) Numerical prediction for Model number 1. *Verification of numerical procedures for the analysis of soil liquefaction problems* (eds K Arulanandan and RF Scott), A.A. Balkema, Rotterdam 1 87-108.
- Chan, AHC, Famiyesin, OO and Muir Wood, D (1993) Numerical prediction for Model number 2. *Verification of numerical procedures for the analysis of soil liquefaction problems* (eds K Arulanandan and RF Scott), A.A. Balkema, Rotterdam 1 343-361.
- Chan, AHC, Famiyesin, OO and Muir Wood, D (1993) Numerical prediction for Model number 3. *Verification of numerical procedures for the analysis of soil liquefaction problems* (eds K Arulanandan and RF Scott), A.A. Balkema, Rotterdam 1 489-510.
- Chan, AHC, Famiyesin, OO and Muir Wood, D (1993) Numerical prediction for Model number 4a. *Verification of numerical procedures for the analysis of soil liquefaction problems* (eds K Arulanandan and RF Scott), A.A. Balkema, Rotterdam 1 623-630.
- Chan, AHC, Famiyesin, OO and Muir Wood, D (1993) Numerical prediction for Model number 4b. *Verification of numerical procedures for the analysis of soil liquefaction problems* (eds K Arulanandan and RF Scott), A.A. Balkema, Rotterdam 1 711-720.
- Chan, AHC, Famiyesin, OO and Muir Wood, D (1993) Numerical prediction for Model number 7. *Verification of numerical procedures for the analysis of soil liquefaction problems* (eds K Arulanandan and RF Scott), A.A. Balkema, Rotterdam 1 835-850.



- Chan, AHC, Famiyesin, OO and Muir Wood, D (1993) Numerical prediction for Model number 11. *Verification of numerical procedures for the analysis of soil liquefaction problems* (eds K Arulanandan and RF Scott), A.A. Balkema, Rotterdam 1 909-931.
- Muir Wood, D (1994) Appropriate technology for geotechnical modelling. *Geo-engineering Seminar on Application of constitutive models to geotechnical problems*. Chubu Branch of the Japanese Society of Soil Mechanics and Foundation Engineering 45-71.
- Muir Wood, D and Stone, KJL (1994) Some observations of zones of localisation in model tests on dry sand. *Localisation and bifurcation theory for soils and rocks* (eds R Chambon, J Desrues, I Vardoulakis) A.A. Balkema, Rotterdam 155-164
- Muir Wood, D (1995) General report : Evaluation of material properties. *Pre-failure deformation characteristics of geomaterials* (eds S Shibuya, T Mitachi and S Miura), A.A.Balkema, Rotterdam, 2 1179-1199.
- Muir Wood, D (1995) Discussion summary : Modelling of shear deformation of geomaterials - Modelling of material properties. *Pre-failure deformation characteristics of geomaterials* (eds S Shibuya, T Mitachi and S Miura), A.A.Balkema, Rotterdam, 2 1229-1230.
- Chan, AHC, Muir Wood, D and Famiyesin, OO (1996) Numerical solutions to the fully coupled Biot equations. *Japan-UK Seismic Risk Forum, Workshop on Implications of recent earthquakes on seismic risk, Abstract volume* (eds AS Elnashai and A Papazoglou), Imperial College 16-17.
- Muir Wood, D, Chan, AHC and Hamilton, CJ (1996) Constitutive modelling for sands under non-monotonic loading. *Japan-UK Seismic Risk Forum, Workshop on Implications of recent earthquakes on seismic risk, Abstract volume* (eds AS Elnashai and A Papazoglou), Imperial College 31-32.
- Muir Wood, D (1996) Modelling destructuration of natural soils. *Symposium on Advances in Geotechnical Engineering (SAGE 96)*, (eds MR Madhav, PK Basudhar and S Chandra), IIT Kanpur 88-95.
- Muir Wood, D (1998) Deformation properties of soils for dynamic analyses. *Seismic design practice into the next century* (ed E Booth), Balkema, Rotterdam 15-24.
- Muir Wood, D, Taylor, CA and Crewe, AJ (1998) Bristol shaking table: recent developments. *Proc 2nd Japan-UK Workshop on Implications of recent earthquakes on seismic risk*, Tokyo Institute of Technology, Technical report TIT/EERG 98-6. 289-300.
- Muir Wood, D, Crewe, AJ, Taylor, CA and Gajo, A (1998) Localisation in earthquake simulation experiments. *Localisation and bifurcation theory for soils and rocks* (eds T Adachi, F Oka and A Yashima) Balkema 117-126.
- Muir Wood, D (1998) Constitutive modelling: required complexity? *Pre-failure deformation behaviour of geomaterials* (eds RJ Jardine, MCR Davies, DW Hight, AKC Smith and SE Stallebrass) Thomas Telford 405-407 ISBN 0 7277 2642 0.
- Muir Wood, D (2000) The role of models in civil engineering. *Constitutive modelling of granular materials* (ed D Kolymbas) Berlin:Springer-Verlag 37-55 ISBN 3-540-66919-1
- Gajo, A, Bigoni, D and Muir Wood, D (2001) Stress induced elastic anisotropy and strain localisation in sand. *Bifurcation and localisation theory in geomechanics* (eds H-B Mühlhaus, A Dyskin and E Pasternak) Svets & Zeitlinger 37-44
- Muir Wood, D & Kalasin, T (2002) Nonlinear seismic behaviour of geotechnical systems. *Fourth Forum on Implications of recent earthquakes on seismic risk*, Tokyo Institute of Technology, Technical report TIT/EERG 02-1, 85-94.
- Muir Wood, D (2002) Constitutive cladistics: the progeny of Critical State Soil Mechanics. *Constitutive and centrifuge modelling: two extremes* (ed S Springman) Swets & Zeitlinger, Lisse 35-58. ISBN 90 5809 361 1
- Muir Wood, D & Gajo, A (2005) Hierarchical critical state models. *Soil constitutive models: evaluation, selection and calibration* (eds JA Yamamuro and VN Kaliakin), ASCE Geotechnical Special Publication SP128, 459-482.
- Muir Wood, D (2005) Physical modelling. *Prediction and simulation methods in geomechanics: State-of-the-art report on selected topics by TC-34*, Technical Committee 34 of ISSMGE, Japanese Geotechnical Society 7-11.
- Muir Wood, D (2006) Keynote address, IS Yamaguchi: Soil: discontinuum-continuum. *Geomechanics and geotechnics of particulate media* (eds M Hyodo, H Murata & Y Nakata)
- Muir Wood, D (2007) Modelling of dynamic soil problems. (Keynote lecture: 4th International Conference on Earthquake geotechnical engineering, Thessaloniki) Chapter 6 in *Earthquake geotechnical engineering* (ed K Pitilakis) Springer, Dordrecht 131-149.
- Muir Wood, D (2008) Modelling granular materials: discontinuum-continuum. *Structures and granular solids: from scientific principles to engineering applications*. Michael Rotter Festschrift, Edinburgh (eds JF Chen, JY Ooi, JG Teng) CRC Press/Balkema 21-40
- Muir Wood, D (2008) Critical states and soil modelling. Keynote address: *Deformational characteristics of geomaterials* (eds SE Burns, PW Mayne, JC Santamarina) IOS Press, Amsterdam 1 51-72
- Nakayama, H, Dietz, MS, Lings, ML & Muir Wood, D (2010) Modelling the behaviour of sand-steel interfaces. *Characterisation and behaviour of interfaces*, (ed JD Frost) IOS Press, Amsterdam 78-84
- Muir Wood, D (2011) Constitutive modelling. Chapter 2 in *Mechanical behaviours of soils under environmentally induced cyclic loads* (eds Di Prisco, C & Muir Wood, D), International Centre for Mechanical Sciences (CISM), Courses and lectures 534, Springer, Wien/New York 137-226.
- Muir Wood, D (2011) Macroelement modelling. Chapter 8 in *Mechanical behaviours of soils under environmentally induced cyclic loads* (eds Di Prisco, C & Muir Wood, D), International Centre for Mechanical Sciences (CISM), Courses and lectures 534, Springer, Wien/New York 399-438.
- Muir Wood, D (2012) Soils: virtues and vices: spatial awareness *XIII Congresso Nacional de Geotecnia, Lisboa* Sociedade Portuguesa de Geotecnia, Lisboa 129 (Summary) and CD pp20
- Muir Wood, D. (2012) Soils in space. *Constitutive modelling of geomaterials: Advances and new applications*. (eds Q. Yang, J-M Zhang, H Zheng & Y Yao) Springer 239-246

## Conference papers

- Wood, DM (1972) A computer controlled apparatus for mechanical testing of soils. *Proc. 8th DECUS European Seminar*, Strasbourg 419-423
- Wood, DM and Wroth, CP (1972) Truly triaxial shear testing of soils at Cambridge. *The deformation and the rupture of soils subjected to multiaxial stresses*. RILEM International Symp., Cannes 2 191-205
- Wood, DM (1976) Comments on cyclic loading of clay. *Proc. Int. Conf. on Behaviour of Offshore Structures*, Trondheim 2 418-424
- Wood, DM, Kjærnsli, B and Höeg, K (1976) Thoughts concerning the unusual behaviour of Hyttejuvet Dam. *Proc. 12th Int. Conf. on Large Dams*, Mexico Q45, R23 391-414
- Wood, DM and Wroth, CP (1976) The correlation of some basic engineering properties of soils. *Proc. Int. Conf. on Behaviour of Offshore Structures*, Trondheim 2 441-445
- Wood, DM (1979) Thoughts concerning the simple shear test. *Proc. 2nd Int. Conf. on Behaviour of Offshore Structures*, London 3 796-799
- Wood, DM and Budhu, M (1980) The behaviour of Leighton Buzzard sand in cyclic simple shear tests. *Proc. Int. Symp. on Soils under cyclic and transient loading*, Swansea (eds G.N. Pande and O.C. Zienkiewicz) A.A. Balkema, Rotterdam 1 9-21
- Wood, DM (1981) True triaxial tests on Boston blue clay. *Proc. 10th Int. Conf. on Soil Mechs. and Foundation Engineering*, Stockholm 1 825-830
- Scarpelli, G and Wood, DM (1982) Experimental observations of shear band patterns in direct shear tests. *Proc. IUTAM Symp. on Deformation and failure of granular materials*, Delft (eds PA Vermeer and HJ Luger) A.A. Balkema, Rotterdam 473-484
- Wood, DM (1985) Index properties and consolidation history. *Proc. 11th Int. Conf. on Soil Mechs. and Foundation Engineering*, San Francisco 2 703-706
- Airey, DW and Muir Wood, D (1988) Cambridge True Triaxial Apparatus. *Advanced triaxial testing of soil and rock* (eds RT Donaghe, RC Chaney and ML Silver) ASTM:STP 977, 796-805.
- Stone, KJL and Muir Wood, D (1988) Model studies of soil deformations over a moving basement. *Engineering geology of underground movements (Proc. 23rd Annual Conf. of the Engineering Group of the Geological Society, Nottingham, Sept. 1987)*(eds FG Bell, MG Culshaw, JC Cripps and MA Lovell) Geological Society, Eng. Geology Special Publication No 5, 159-165.
- Stone, KJL and Muir Wood, D (1988) Some observations of faulting in soft clays. *Proc. Int. Conf. on Geotechnical centrifuge modelling (Centrifuge '88)*, Paris (ed J-F Corte) A.A. Balkema, Rotterdam 547-552.
- Al-Tabbaa, A and Muir Wood, D (1989) An experimentally based "bubble" model for clay. *Numerical Models in Geomechanics NUMOG III* (eds S Pietruszczak and GN Pande) Elsevier Applied Science 91-99.
- Graham, J, Muir Wood, D, Yin, J-H and Azizi, F (1989) Prediction of triaxial stress-strain behaviour of Winnipeg clay using an anisotropic elastic-plastic model. *Proc. 42nd Canadian Geotechnical Conf.*, Winnipeg (8pp)
- Hawkins, PG, Mair, RJ, Mathieson, WG and Muir Wood, D (1990) Pressuremeter measurement of total horizontal stress in stiff clay. *Pressuremeters (Proc. 3rd Int. Symp. on Pressuremeters, Oxford, British Geotechnical Society)*, Thomas Telford, Ltd., London 321-329.
- Alawaji, H, Alawi, M, Ko, H-Y, Sture, S, Peters, JF and Muir Wood, D (1990) Experimental observations of anisotropy in some stress-controlled tests on dry sand. *Yielding, damage, and failure of anisotropic solids* (ed JP Boehler) Mechanical Engineering Publications, London EGF5, 251-264.
- Muir Wood, D, Meadows, PS and Tufail, A (1990) Biological strengthening of marine sediments. *Microbiology in civil engineering*, FEMS Symposium No 59 (ed P Howsam), E. & F.N. Spon, 306-316.
- Nakai, T and Muir Wood, D (1990) Analysis of shear tests on Leighton Buzzard sand by kinematic  $t_{ij}$ -sand model (in Japanese), *Proc. 25th Japan National Conf. on Soil mechanics and foundation Engineering*, Okayama (13-15 June) 1 49-52.
- Chan, AHC, Famiyesin, OO and Muir Wood, D (1991) A fully explicit u-w scheme for dynamic soil and pore fluid interaction. *Computational Mechanics (Proc. Asian Pacific Conf. on Computational mechanics, Hong Kong)* (eds YK Cheung, JHW Lee and AYT Leung) A.A. Balkema, Rotterdam 1 881-887.
- Chan, AHC, Jendele, L, Muir Wood, D and Drescher, A (1992) Numerical localisation analyses using randomly distributed material properties. *Numerical models in geomechanics, NUMOG IV*, (eds GN Pande, S Pietruszczak) (Proc. 4th Int. Symp. on Numerical models in geomechanics, Swansea) A.A. Balkema, Rotterdam 1 349-355.
- Chan, AHC and Muir Wood, D (1993) Applications of unified finite element codes to static, consolidating, and dynamic soil, structure and pore fluid interaction. *Proc. Seminar on Applications of finite elements in geotechnical engineering* (London, 10 June) (ed V Peshkam), NAFEMS 49-52.
- Muir Wood, D, MacKenzie, NL and Chan, AHC (1993) Selection of parameters for numerical predictions. *Predictive soil mechanics* (eds GT Housley and AN Schofield), (Proc. Wroth Memorial Symposium), Thomas Telford 496-512
- Chan, AHC, Famiyesin, OO and Muir Wood, D (1993) Effect of fluid bulk modulus variation on the critical time step for dynamic analysis of saturated soils using an explicit u-w scheme. *Developments in civil and construction engineering computing* (ed BHV Topping) Civil-Comp Press 141-152
- Chan, AHC, Famiyesin, OO, Madabhushi, SPG and Muir Wood, D (1994) Dynamic analyses of saturated soils. *Proc. 13th Int. Conf. on Soil Mechs and Foundation Eng.*, New Delhi 4 1371-1374.
- Chan, AHC, Jendele, L and Muir Wood, D (1994) Numerical modelling of moisture, heat and pollutant transport in partially saturated porous media using Object Oriented Programming. *2nd ACME Conference*, Manchester, April, extended abstract : 4 pages

- Chan, AHC, Famiyesin, OO and Muir Wood, D (1994) Numerical modelling of dynamic experiments on dry sand beds using simple models. *Numerical methods in geotechnical engineering* (ed IM Smith) (*Proc. 3rd European Conf. on Numerical methods in geotechnical engineering, ECONMIG-94, Manchester*), A.A. Balkema, Rotterdam, 249-255.
- Bowey, AW and Muir Wood, D (1994) Back analysis of a trial loading on soft clay. *Pre-failure deformation characteristics of geomaterials* (eds S Shibuya, T Mitachi and S Miura), A.A. Balkema, Rotterdam, 1 559-565.
- Nakai, T and Muir Wood, D (1994) Analysis of true triaxial and directional shear cell tests on Leighton Buzzard sand. *Pre-failure deformation characteristics of geomaterials* (eds S Shibuya, T Mitachi and S Miura), A.A. Balkema, Rotterdam, 1 419-425.
- Bouazza, A and Muir Wood, D (1995) Measurement of lateral stress in a hydraulic oedometer. *International Symposium on Compression and consolidation of clayey soils, IS-Hiroshima '95*, (eds H Yoshikuni and O Kusakabe) A.A. Balkema, Rotterdam 1 33-36
- Famiyesin, OOR, Chan, AHC and Muir Wood, D (1995) Effect of dilatancy on non-associated plasticity models for soils under earthquake loading. *4th Int. Conf. on Computational plasticity (COMPLAS IV): Fundamentals and applications*, Barcelona (eds DRJ Owen, E Onate and E Hinton), Pineridge Press, Swansea 1821-1834.
- Muir Wood, D, Jendele, L, Chan, AHC, Cooper, MR (1995) Slope failure by pore pressure recharge : numerical analysis. *The interplay between geotechnical engineering and engineering geology, Proc 11th European Conf on Soil Mechanics and Foundation Engineering*, Copenhagen, Danish Geotechnical Society, dgf-bulletin 11, 6 6.1-6.8.
- Scarpelli, G, Curzi, PV, Sakellariadi, E, Baldelli, P, Bontempo, A, Gens, A, Chan, A, Jendele, L, Muir Wood, D, Smith, IM, Amorosi, A, Burghignoli, A and Rampello, S (1995) Physical processes and related instabilities in clayey slopes. *The interplay between geotechnical engineering and engineering geology, Proc 11th European Conf on Soil Mechanics and Foundation Engineering*, Copenhagen, Danish Geotechnical Society, dgf-bulletin 11, 4 4.105-4.114.
- Muir Wood, D and Graham, J (1995) State boundary surface and anisotropy. *Numerical Models in Geomechanics (NUMOG V)* (eds GN Pande and S Pietruszczak), A.A. Balkema, Rotterdam 77-82.
- Muir Wood, D (1995) Kinematic hardening model for structured soil. *Numerical Models in Geomechanics (NUMOG V)* (eds GN Pande and S Pietruszczak), A.A. Balkema, Rotterdam 83-88.
- Muir Wood, D, Meadows, A, Murray, JMH and Meadows, PS (1995) Effect of fungal and bacterial colonies on slope stability. *Vegetation and slopes - stabilisation, protection and ecology* (ed DH Barker) Thomas Telford, London 46-51.
- Chan, AHC, Hamilton, CJ and Muir Wood, D (1996) A new two surface kinematic hardening model for sands under static and dynamic loading. *Computational mechanics in UK (4th ACME Annual Conf., Glasgow)* (Extended abstracts, compiled N Bicanic and BE Richards) Faculty of Engineering, University of Glasgow 141-145
- Kumar, GV and Muir Wood, D (1996) Mechanical behaviour of mixtures of kaolin and coarse sand. *IUTAM Symposium on Mechanics of granular and porous materials* (eds NA Fleck and ACF Cocks), Kluwer Academic Publishers 57-68
- Muir Wood, D, Alsayed, MI and Stewart, WM (1997) Constitutive conjectures for response of sand under multiaxial loading. *Numerical models in geomechanics (NUMOG VI: Montreal)* (eds GN Pande and S Pietruszczak) Balkema 51-56.
- Hu, W, Muir Wood, D and Stewart, WM (1997) Ground improvement using stone column foundations. *Proc. Int. Conf. on Ground improvement techniques*, Macau. Conference Logistics and Services, Singapore 247-256. (ISBN 981-00-8899-X)
- Muir Wood, D and Hu, W (1997) Mechanisms of load transfer deduced from failure modes of model stone column foundations. *Deformation and progressive failure in geomechanics, IS-Nagoya '97* (eds A Asaoka, T Adachi and F Oka), Pergamon 799-804.
- Hamilton, CJ, Chan, AHC and Muir Wood, D (1997) A plane strain constitutive model for sands under non-monotonic loading. Copenhagen.
- Meadows, PS, Murray, JMH, Meadows, A, Muir Wood, D and West, FJC (1998) Microscale biogeotechnical differences in intertidal sedimentary ecosystems. *Sedimentary processes in the intertidal zone* (eds KS Black, DM Patterson and A Cramp), Geological Society of London. Special Publications, 139:349-366 (ISBN 1-86239-013-4).
- Hamilton, CJ, Chan, AHC and Muir Wood, D (1998) Dynamic finite element analyses of sand:structure interaction using a new kinematic hardening model. *Seismic design practice into the next century* (ed E Booth), Balkema, Rotterdam 179-186.
- Rouainia, M and Muir Wood, D (1998) A critical state two surface kinematic hardening model for natural clays. *Computational mechanics in UK, 6th ACME UK* (ed EAW Maunder) School of Engineering, University of Exeter 79-82 (ISBN 0 9532721 0 9)
- Gajo, A and Muir Wood, D (1998) Numerical analysis of shear stack under dynamic loading. *Proc 11th European Conf on Earthquake Engineering* (eds P Bisch, P Labbé and A Pecker) Balkema, Rotterdam, Abstract volume 259 and pp12 on CD (ISBN 90 5410 9823)
- Rouainia, M and Muir Wood, D (1998) A kinematic hardening model for structured clays. *The geotechnics of hard soils-soft rocks* (eds A Evangelista and L Picarelli), Balkema, Rotterdam 2:817-824.
- Le Masurier, J, Muir Wood, D and Blockley, DI (1998) Process modelling the Observational Method. *The value of geotechnics in construction*, Construction Research Communications Limited, London 147-153
- Rouainia, M and Muir Wood, D (1999) Implicit constitutive integration of Cam clay plasticity model at finite strain. *Computational mechanics in UK, 7th ACME UK* (ed P Bettess) University of Durham, Penshaw Press, Sunderland 89-92 (ISBN 0-9530967-6-9)
- Muir Wood, D and Kumar, GV (1999) Experimental observations of behaviour of heterogeneous soils. *Mechanics of heterogeneous materials (Conference to the memory of Professor Jean-Paul Boehler, Grenoble)* (eds F Darve and B Loret) (4 pages)

- Muir Wood, D (1999) Numerical analysis of earth pressures on an integral bridge abutment. *FLAC and Numerical modelling in geomechanics* (eds C Detournay and R Hart) Balkema 443-450
- Muir Wood, D (1999) Pore pressures for stability analysis of embankment on soft clay. *Numerical models in geomechanics (NUMOG VII: Graz)* (eds GN Pande, S Pietruszczak and HF Schweiger) Balkema 521-526
- Rouainia, M and Muir Wood, D (2000) Efficient integration for kinematic hardening soil plasticity. *8th Annual Conf of the ACME (ACME2000)* (ed M Cross) University of Greenwich 151-154 (ISBN 1-86166-150-9)
- Rouainia, M and Muir Wood, D (2000) Efficient implementation of large strain elasto-plastic constitutive model for geotechnical materials. *SACAM2000*, Durban January
- Mair, AJ & Muir Wood, D (2001) Seismic analysis and retrofit of dock walls. *4th Int Conf on Recent advances in geotechnical earthquake engineering and soil dynamics*, San Diego (CD paper 7.14, 8pp) ISBN 1-887009-05-1
- Muir Wood, D, Lings, ML, Nash, DFT and Gajo, A (2001) Anisotropy of soils: laboratory measurements and constitutive implementation. *Proc. 15th ICSMGE, Istanbul* (ed Publications Committee of the 15th ICSMGE) Balkema 1 321-324.
- Arroyo, M, Medina, L and Muir Wood, D (2002) Numerical modelling of scale effects in bender-based pulse tests. *Numerical models in geomechanics (NUMOG VIII: Rome)* (eds GN Pande, S Pietruszczak) Balkema 589-595
- Rouainia, M, Arroyo, M & Muir Wood, D (2002) On numerical integration of a kinematic hardening soil plasticity model. *5th European Conf on Numerical Methods in Geotechnical Engineering NUMGE2002* (ed P Mestat) Presses de l'ENPC/LCPC, Paris 187-194. ISBN 2 85978 362 8
- Le Masurier, J, Muir Wood, D, Chapman, T & Nicholson, D (2003) Procurement and modelling of the observational method for managing geotechnical uncertainty. *Proceedings of the 2nd International Conference on Innovation in Architecture, Engineering and Construction*, (ed CJ Anumba) Millpress, Rotterdam 205-213 ISBN 9059660080.
- Arroyo, M & Muir Wood, D (2003) Simplifications related to dynamic measurements of anisotropic  $G_0$ . *Deformation characteristics of geomaterials (Proc. IS Lyon)* (eds H DiBenedetto, T Doanh, H Geoffroy & C Sauzéat) AA Balkema, Lisse 1233-1239.
- Muir Wood, D & Kalasin, T (2004) Macroelement for study of dynamic response of gravity retaining walls. *Cyclic behaviour of soils and liquefaction phenomena*, (ed T Triantafyllidis) AA Balkema Publishers, Leiden 551-561
- Muir Wood, D & Kalasin, T (2004) Dynamic macroelement model for gravity retaining walls. *Numerical models in geomechanics – NUMOG IX*, (eds GN Pande and S Pietruszczak) Taylor & Francis Group, London 731-737
- Dihoru, L, Muir Wood, D, Lings, ML & Sadek, T (2005) The stress-strain behaviour of granular materials in true triaxial conditions – apparatus and programme of testing at Bristol University. *Proc 3<sup>rd</sup> Int Conf on Powder Metallurgy*, Sinaia, Romania 1 185-192
- Muir Wood, D, Gajo, A & Russell, AR (2005) Hierarchical approach to critical state modelling. *Proc. 11th Int Conf on Computer Methods and Advances in Geomechanics: Prediction, analysis and design in geomechanical applications*, (eds G Barla & M Barla) Patron Editore, Torino, 4 223-232.
- Kalasin, T & Muir Wood, D (2005) An investigation into permanent displacement of a gravity retaining wall subjected to earthquake motions. *Soil-structure interaction: calculation methods and engineering practice (Proc. of the Int. Geotechnical Conf. dedicated to the tercentenary of Saint Petersburg)*(ed VM Ulitsky) ASV Publishers, Saint Petersburg-Moscow 1 393-399
- Dietz, MS & Muir Wood, D (2006) Shake table testing of a soft caisson for geotechnical seismic retrofit. *Physical modelling in geotechnics – 6th ICPMG '06* (eds CWW Ng, LM Zhang & YH Wang) Taylor & Francis, London 1 501-506.
- Muir Wood, D (2006) Geomaterials with changing grading: a route towards modelling. *Geomechanics and geotechnics of particulate media* (eds M Hyodo, H Murata & Y Nakata) Taylor & Francis, London 313-318.
- Ibraim, E, Muir Wood, D, Maeda, K & Hirabayashi, H (2006) Fibre-reinforced granular soils: numerical approach. *Geomechanics and geotechnics of particulate media* (eds M Hyodo, H Murata & Y Nakata) Taylor & Francis, London 443-448.
- Sadek, T, Lings, ML, Dihoru, L & Muir Wood, D (2007) Anisotropic stiffness of Hostun sand. *Numerical models in geomechanics NUMOG X* (eds GN Pande & S Pietruszczak) Taylor & Francis Group, London 147-152.
- Muir Wood, D, Sadek, T, Dihoru, L, Lings, ML & Javaheri, H (2007) Deviatoric stress-response envelopes from multiaxial tests on sand. in *Soil Stress-Strain Behavior: Measurement, Modeling and Analysis: A Collection of Papers of the Geotechnical Symposium in Rome (March 16-17, 2006)* (eds. Ling, HI, Callisto, L, Leshchinsky, D, Koseki, J) Series: Solid Mechanics and its Applications 146. Springer Dordrecht (ISBN 978-1-4020-6145-5) 253-262
- Nash, DFT, Lings, ML, Benahmed, N, Sukolrat, J & Muir Wood, D (2007) The effects of controlled destructuring on the small strain shear stiffness  $G_0$  of Bothkennar clay. in *Soil Stress-Strain Behavior: Measurement, Modeling and Analysis: A Collection of Papers of the Geotechnical Symposium in Rome (March 16-17, 2006)* (eds. Ling, HI, Callisto, L, Leshchinsky, D, Koseki, J) Series: Solid Mechanics and its Applications 146. Springer Dordrecht (ISBN 978-1-4020-6145-5) 287-298
- Dietz, M & Muir Wood, D (2007) Shaking table evaluation of dynamic soil properties. *Proc. 4th International Conference on Earthquake Geotechnical Engineering*, Thessaloniki, Paper No. 1196
- Diambra, A, Ibraim, E, Russell, AR, Muir Wood, D (2007) Shear tests on fibre reinforced sands. *Proceedings of 5<sup>th</sup> International Symposium on earth reinforcement*, Taylor & Francis: Balkema, 329-334.
- Diambra, A, Ibraim, E, Muir Wood, D, Bennanni, Y, Russell, AR (2008) Effect of sample preparation on the behaviour of fibre reinforced sands. *Deformational characteristics of geomaterials* (eds SE Burns, PW Mayne, JC Santamarina) IOS Press, Amsterdam 2 629-636
- Nakayama, H, Dietz, MS, Lings, ML & Muir Wood, D (2008) Modelling the behaviour of sand-steel interfaces. *Symposium on behaviour of interfaces*, Atlanta

- Muir Wood, D, Maeda, K & Nukudani, E (2008) Discrete element modelling of soil erosion. *4<sup>th</sup> Int Conf on Scour and Erosion*, Japanese Geotechnical Society, Tokyo (ISBN 978-4-88644-815-6) 491-496
- Kalasin, T & Muir Wood, D (2008) Seismic analysis of retaining walls within plasticity framework. *14<sup>th</sup> World Conf on Earthquake Engineering, Beijing, China* paper 04-01-0111, 11pp
- Muir Wood, D, Abate, G & Maugeri, M (2009) Adequate complexity for dynamic geotechnical modelling. *Macro- to nano-scale inelastic behavior of materials: Plasticity, fatigue, and fracture (Proceedings of PLASTICITY '09: The Fifteenth International Symposium on Plasticity and its current applications)* (eds: AS Khan & B Farrokh; asst.ed.s: M Baig, H Liu, C Meredith, A Pandey & S Yu) NEAT PRESS, PO Box 136, Fulton, Maryland 20759-0591, USA ISBN 0-9659463-9-8 202-204
- Muir Wood, D, Kikumoto, M and Russell, AR (2009) Particle crushing and deformation behaviour. *Prediction and simulation methods for geohazard mitigation* (eds F Oka, A Murakami, S Kimoto) CRC Press/Balkema
- Russell, A, Muir Wood, D and Kikumoto, M (2009) Particle crushing in granular assemblies. *Proceedings of the 6th International Conference on Micromechanics of Granular Media*, P&G '09, Golden, Colorado, 13-17 July 2009 : AIP Conference Proceedings, (Eds. Nakagawa, M. and Luding, S.), Springer 875-878.
- Lesniewska, D, Muir Wood, D and Pietrzak, M (2009) Particle scale features in shearing of glass ballotini. *Proceedings of the 6th International Conference on Micromechanics of Granular Media*, P&G '09, Golden, Colorado, 13-17 July 2009 : AIP Conference Proceedings, (Eds. Nakagawa, M. and Luding, S.), Springer 335-338.
- Dihoru, L., Bhattacharya, S., Taylor, C. A., Muir Wood, D., Moccia, F., Simonelli, A. L. & Mylonakis, G. (2009) Experimental modelling of kinematic bending moments of piles in layered soils in *Performance-Based Design in Earthquake Geotechnical Engineering*. (eds: Kokusho, T., Tsukamoto, Y. & Yoshimine, M.) Taylor & Francis Group 581-588
- Ibraim, E, Diambra, A, Muir Wood, D, Russell, A & Maeda, K (2010) Some observations on the mechanics of fibre reinforced sand. *9th International Conference on Geosynthetics*, Brazil, May, 2010
- Dihoru, L, Bhattacharya, S, Taylor, CA, Muir Wood, D, Moccia, F, Simonelli, AL & Mylonakis, G (2010) Physical modelling of kinematic pile-soil interaction under seismic conditions. *Physical modelling in geotechnics (ICPMG 2010, Zurich)* (Eds S Springman, J Laue & L Seward) CRC Press, Taylor & Francis Group 1 123-128.
- Dihoru, L, Taylor, CA, Bhattacharya, S, Muir Wood, D, Moccia, F, Simonelli, AL & Mylonakis, G (2010) Stiffness design for granular materials – a theoretical and experimental approach. *Physical modelling in geotechnics (ICPMG 2010, Zurich)* (Eds S Springman, J Laue & L Seward) CRC Press, Taylor & Francis Group 1 129-134.
- Muir Wood, D (2012) Geotechnical engineering education – removing the barriers. *Shaking the foundations of geotechnical engineering education*. (eds B McCabe, M Pantazidou & D Phillips) CRC Press, Taylor & Francis Group, London 69-74.
- Dijkstra, J and Muir Wood, D (2013) On the observation with polarised light of a granular medium under stress. *Proceedings Workshop on Experimental micromechanics for geomaterials*, University of Hong Kong (May) Paper T1.5 (pp4)

## Discussion

- Wood, DM (1972) Discussion on : A microstructural view of the mechanical properties of saturated clay. *Géotechnique* **22** 2, 364-367
- Wood, DM (1979) Discussion: Design stresses for concrete structures subject to multiaxial stresses. *The Structural Engineer (J. Inst. Structural Engineers)* **57A** 3, 93-94
- Wood, DM (1979) Discussion: The behaviour of Drammen clay under cyclic loading. *Géotechnique* **29** 1, 99-100
- Wood, DM (1981) Discussion: Principal stress rotation: a missing parameter. *Journal of the Geotechnical Engineering Division, ASCE* **107** GT5, 704-707
- Airey, DW and Wood, DM (1984) Discussion: Specimen size effect in simple shear test. *Journal of Geotechnical Engineering, ASCE* **110** GT3, 439-442
- Muir Wood, D (1987) Discussion: On deformation of granular material in simple shear. *Soils and Foundations* **27** 4, 164-166
- Muir Wood, D (1989) Discussion: Strength of granular material in simple shear. *Soils and Foundations* **29** 2, 154-156
- Muir Wood, D (1998) Discussion: Is soil mechanics theory any use? *New Civil Engineer (?)* 1 August (meeting report)
- Arroyo, M and Muir Wood, D (2004) Discussion: On the applicability of cross-anisotropic elasticity to granular materials at very small strains. *Géotechnique* **54** 1, 75-76

## Book reviews

- Muir Wood, D (1987) Critical state soil mechanics via finite elements (by AM Britto and MJ Gunn) *Proc. Instn Mech. Engrs* **201** C4, 308.
- Muir Wood, D (1988) Programming the finite element method (IM Smith and DV Griffiths) *Communications in Applied Numerical Methods* **4** 845.
- Muir Wood, D (1990) Engineering problems of regional soils, *Structural Engineering Review* **2** 2, 133-134.
- Muir Wood, D (1991) Nonlinear analysis in soil mechanics: theory and implementation (WF Chen and E Mizuno) *Géotechnique* **41** 2, 293.
- Muir Wood, D (1992) Limit analysis in soil mechanics (WF Chen and XL Liu) *Géotechnique* **42** 2, 379.
- Muir Wood, D (1993) The pressuremeter (J-L Briaud) *Géotechnique* **43** 2, 348.
- Muir Wood, D (1993) The stability of slopes (EN Bromhead) *Géotechnique* **43** 3, 505.
- Muir Wood, D (1994) An introduction to the mechanics of soils and foundations (JH Atkinson) *Quarterly Journal of Engineering Geology* **27** 3, 286-287.

- Muir Wood, D (2011) Book review: Rudolph Glossop and the rise of geotechnology: selected journals, diaries and letters (ed Ronald E. Williams; foreword by John Burland) *Canadian Geotechnical Journal* **48** 6, 984-985
- Muir Wood, D (2013) Book review: Shaking the foundations of geo-engineering education. *Canadian Geotechnical Journal* **50** 8, 906
- Muir Wood, D (2013) Book review: Analytic methods in geomechanics. *Canadian Geotechnical Journal* **50** 9, 1008.

## RESEARCH STUDENTS

### Cambridge University

- Feb 1976 - July 1977 R. Nova : Theoretical studies of constitutive relations for soils (MSc 1977)  
Oct 1976 - Mar 1980 A.C. Smith : Buckling of cylindrical shells in clay  
Oct 1976 - June 1979 M. Budhu : Simple shear deformation of sands (PhD 1979)  
Jan 1979 - Aug 1979 R. Dorey : Transient seepage in saturated and unsaturated soils (MPhil 1979)  
Jan 1979 - Sept 1979 B.S. Hamilton : Soils in the simple shear apparatus  
July 1979 - Jan 1982 C.M. Szalwinski : Finite element modelling of kinematic history for particulate media (PhD 1982)  
Jan 1980 - Aug 1980 W.C.W. Lau : Investigations on the cyclic loading of clay (MPhil 1980)  
Jan 1980 - Aug 1980 R.K.S. Wong : A study of the behaviour of Teton Dam soil with special reference to low stress levels (MPhil 1980)  
Jan 1980 - June 1984 D.W. Airey : Clay in circular simple shear apparatus (MPhil 1980; PhD 1984)  
Jan 1981 - Aug 1981 G. Scarpelli : Shear bands in sand (MPhil 1981)  
Jan 1984 - Jan 1988 A. Al-Tabbaa : Anisotropy of clay (MPhil 1984) Properties of speswhite kaolin (PhD 1988)  
Jan 1985 - Sept 1988 K.J.L. Stone : Shear band formation in granular materials (MPhil 1985) Faulting in soft sediments (PhD 1989)  
Oct 1986 - Aug 1987 S.Y. Lee : Formation of ruptures in granular materials beneath footings (MPhil 1987)  
Oct 1986 - Aug 1987 D.F. Liu : Constitutive relations for sands (MPhil 1987)

### Glasgow University

- Sept 1987 - Jan 1991 D.F. Liu : A constitutive theory for sand and its application (PhD 1991)  
Oct 1988 - Apr 1993 K. Belkheir : Yielding and stress-strain behaviour of sand (MSc 1993)  
Jan 1990 - July 1994 A. Hamidon : Some laboratory studies of anisotropy of permeability of kaolin (PhD 1994)  
Aug 1991 - Nov 1992 X. Xue : Expert system for ground investigation for roads in Scotland (temporary supervisor) (Design of an expert system for ground investigation : PhD 1994)  
Feb 1991 - Jun 1995 Wei Hu : Physical modelling of group behaviour of stone column foundations (PhD 1995)  
Oct 1992 - July 1996 A.W. Bowey : Back analyses of geotechnical structures (PhD 1996)  
Oct 1992 - Apr 1996 G.V. Kumar : Some aspects of the mechanical behaviour of mixtures of kaolin and coarse sand (PhD 1996)  
Oct 1993 - Sept 1995 J. Hirao : Comparison of British, European and Japanese geotechnical codes of practice  
Mar 1994 - Aug 1994 M. Skuse : The uses of colliery spoil as a civil engineering fill material (MSc 1994)  
Mar 1994 - Aug 1994 J.-M. Nguyen : Trees and buildings (MSc 1994)  
Mar 1994 - Aug 1994 J. Lines : Design and analysis of wall-anchor systems (MSc 1994)  
Mar 1994 - Aug 1994 S. Toole : Back analysis of retaining structures (MSc 1994)  
Mar 1994 - Aug 1996 K.E. Young : Geotechnical characteristics of Scottish glacial tills (MSc 1996)  
Mar 1995 - Aug 1995 A. Tran : Hamilton Oil: silo tank foundation (MSc 1995)  
Mar 1995 - Aug 1995 R.S. Campbell : Design of one of the embankments for the Hamilton Oil Terminal access road (MSc 1995)  
Mar 1995 - Aug 1995 M.Y. Zainuddin : Design of L-shaped retaining walls (MSc 1996)

### Bristol University

- Nov 1995 - Sept 1997 A Moncaster : Shear modulus of sand (MSc 1997)  
Mar 1997 - Apr 2001 J LeMasurier : Process modelling applied to observational method of geotechnical design (PhD 2001)  
Nov 1997 - Aug 2001 M Arroyo : Pulse tests in soil samples (PhD 2002)  
Oct 1999 - Sept 2003 A Gajo : Instability phenomena in sand samples (PhD 2004)  
Oct 2000 - Apr 2006 A Harrison : A performance framework for the soil strengthening properties of fibre-reinforced sand. (PhD 2006)  
Oct 2000 - Sept 2004 T Kalasin : Dynamic macroelement model for gravity retaining walls. (PhD 2005)  
Oct 2001 - Apr 2006 T Sadek : The multiaxial behaviour and elastic stiffness of Hostun sand (PhD 2007)  
Oct 2001 - Mar 2007 H Nakayama : Modelling interfaces between sand and structural elements (joint supervision with Martin Lings) (PhD 2007) (part-time supported by Nippon Steel)  
Oct 2002 - Oct 2005 Boung Shik Yoon : Commissioning of a new hollow cylinder apparatus (MSc 2006)  
Oct 2002 - Jan 2009 J Parrott : (joint supervision with Alan Champneys)  
Oct 2005 - Dec 2009 Francesca Ciavaglia : Modelling structure and anisotropy in unsaturated soils (joint supervision with Adrian Russell, David Nash) (PhD 2010)  
Oct 2005 - Oct 2009 Andrea Diambra : Behaviour of sand with flexible fibre reinforcement (joint supervision with Adrian Russell, Erdin Ibrahim) (PhD 2010)  
Oct 2008 - Robert Jessep: Concrete-soil interaction in bored piles in London clay (part-time, joint supervision with David Nash)  
Jan 2009 - Angelo Fasano: Appropriate models for numerical analysis of geotechnical problems. (part-time, joint supervision with David Nash)

### Dundee University

- Oct 2012-Aug 2013 Lei Yang: Examples of soil-structure interaction. (MSc project)





## INVITED LECTURES, COURSES ETC

- Dec 1975 Chalmers Tekniska Högskola, Gothenburg : one week course on Critical State Soil Mechanics (with Dr C.P. Wroth)
- Feb 1976 Cranfield Institute of Technology : two day course on basic soil mechanics
- Mar 1976 Cambridge University Engineering Department : one week course on Offshore Soil Mechanics (course organiser, lecturer, and editor for publication in book form of material presented)
- July 1976 London : course on Analysis of Offshore Structures organised by Computational Mechanics Limited : lecture on 'Soil response'
- July 1977 University of Surrey, Guildford : seminar on Developments in laboratory testing of soils : lecture on 'X-rays, load cells and computers'
- Feb 1978 Institution of Civil Engineers, London : half day meeting on The response of foundation materials to strong motions : lecture on 'Response of soils to cyclic loading'
- Nov 1978 Building Research Establishment : Seminar on offshore geotechnical research funded by the Department of Energy : talk on 'Study of the simple shear test'
- Dec 1979 Danish Geotechnical Society, Copenhagen : one week course on Critical State Soil Mechanics (with Prof C.P. Wroth)
- Oct 1980 McClelland Engineers, London : two day course on Critical State Soil Mechanics (with Prof C.P. Wroth)
- Sept 1981 Department of Engineering Science, Oxford University : one week course on Critical State Soil Mechanics (with Prof C.P. Wroth and Dr G.T. Houlsby)
- Mar 1982 Indian Institute of Technology, Bombay : visit and lectures organised by British Council under collaborative project in offshore engineering
- Mar 1982 Hong Kong Polytechnic : three day course on Stress states, stress paths and critical states for soils (with Dr R.H.G. Parry)
- Sept 1982 Grenoble : invited participant in International Workshop on Constitutive relations for soils
- Sept 1982 Department of Civil Engineering, Nottingham University : one week course on Critical State Soil Mechanics (with Prof C.P. Wroth, Dr G.T. Houlsby and Dr S.F. Brown)
- Oct/Nov 1982 Binnie and Partners, London : five half day seminars on Critical State Soil Mechanics
- Dec 1982 Chalmers Tekniska Högskola, Gothenburg : three day course on Critical State Soil Mechanics
- June 1983 Emmanuel College, Cambridge : two day symposium on Applications of Critical State Soil Mechanics (organiser)
- July 1983 Delft Institute of Technology : three week visit to perform collaborative photoelastic experiments on crushed glass with H.G.B. Allersma (sponsored by Science and Engineering Research Council and Netherlands Science Foundation)
- Nov 1983 Department of Agricultural Engineering, Newcastle University : Soil mechanics discussion meeting : lectures 'Use of fall-cone to determine index properties' and 'Interpretation of index tests to give useful soil mechanics properties'.
- Dec 1983 Asian Institute of Technology, Bangkok : lectures at short course on Recent developments in laboratory and field tests and analysis of geotechnical problems
- Sept 1984 Università di Roma, Istituto di Scienza delle Costruzioni : one week visiting lectureship: Laboratory investigations on the behaviour of soils under cyclic loading
- Feb 1985 Indian Institute of Technology, Kanpur : lectures at International Workshop on Critical state models and behaviour of soils (sponsored by British Council)
- Sept 1985 Madrid : lecture at joint British/Spanish workshop on constitutive relations for civil engineering materials
- Dec 1985 Cambridge University Engineering Department : one week course on Critical State Soil Mechanics (course organiser, lecturer with Prof C.P. Wroth and Dr G.T. Houlsby)
- Aug 1986 University of Colorado, Boulder : two and a half day course on Critical State Soil Mechanics
- Dec 1986 Norges Tekniske Høgskole, Trondheim : two days of lectures within two week course on Soil modelling
- Nov 1987 British Geotechnical Society, London : introducer at half-day meeting on Pressuremeter testing
- Feb 1988 University of Manchester : colloquium on Some studies of anisotropy of soils
- May 1988 Tekniska Högskolan i Luleå: three days of lectures on plasticity and critical state soil mechanics
- Jun/Jul 1988 University of Catania : five days of lectures on constitutive models for soils
- Sept 1988 Heriot-Watt University/Fugro short course on In-situ testing in soft clay : lectures on methods and interpretation of pressuremeter tests
- Nov 1988 Scottish Geotechnical Group, Glasgow : lecture on Soil modelling
- Dec 1988 Statoil, Stavanger : lecture on Anisotropy of soils and Evaluation of permeability of North Sea clays
- Dec 1988 Norges Tekniske Høgskole, Trondheim : two days of lectures within two week course on Soil modelling
- Dec 1988 Norwegian Geotechnical Institute, Oslo : lecture on Anisotropy of soils
- Jan 1989 Helsinki University of Technology : five days of lectures on applications of critical state soil mechanics
- Mar 1989 University of El Minya, Egypt : visiting professor
- Apr 1989 SERC Seminar on Constitutive modelling in geotechnical engineering, Oxford University : invited presentation on Non-monotonic loading of soils
- Apr 1989 US National Centre for Earthquake Engineering Research, New York State : presentations on soil dynamics research as part of SERC visit
- May 1989 University of Oxford : colloquium on Anisotropy of soils
- Aug 1989 Federal University of Rio de Janeiro : two days of lectures on advanced laboratory testing
- Aug 1989 12th Int. Conf. on Soil mechanics and foundation engineering, Rio de Janeiro : co-general reporter, Discussion Session 1, Recent developments in laboratory strength and deformation testing

- Sept 1989 Quaternary Engineering Geology, 25th Annual Conf. of the Engineering Group of the Geological Society, Edinburgh : summing up
- Mar 1990 Society for Earthquake and Civil Engineering Dynamics, London : co-lecturer on Report on visit to National Centre for Earthquake Engineering Research, New York
- Apr 1990 3rd Int. Symp. on Pressuremeters, Oxford : discussion leader, Session 3, Applications in geotechnical design.
- Apr 1990 SERC Seminar on Bothkennar site characterisation, Heriot-Watt University : presentation on laboratory permeability measurements
- Dec 1990 Norges Tekniske Høgskole, Trondheim : two days of lectures within two week course on Soil modelling
- Mar 1991 University of Dundee : colloquium on soil modelling
- May 1991 Helsinki University of Technology : three day course on Finite elements and critical state soil mechanics (with M.J. Gunn)
- May 1991 10th European Conf. on Soil mechanics and foundation engineering, Florence : Discussion leader, Session 2b, Modelling stress-strain-time behaviour of natural soils: cyclic loading
- Aug 1991 7th Meeting of Teachers of Geotechnical Subjects, Edinburgh : lecture on Laboratory testing as a teaching aid
- Sept 1991 Seminar on Expert and knowledge-based systems, Transport and Road Research Laboratory, Scottish Branch, Livingston : lecture on Expert system for ground investigation : soil
- Oct 1991 44th Canadian Geotechnical Conference, Calgary, Alberta : two day course on Elastic-plastic soil mechanics for geotechnical engineers (with J. Graham, J.A. Sladen, K. Been)
- Apr 1992 BGS Young Geotechnical Engineers' Conference, Glasgow University : keynote lecture Research into practice
- Jul 1992 Wroth Memorial Symposium, Oxford : discussion leader, session on Stiffness measurement from field and laboratory tests
- Nov 1992 Workshop on Computer aided designs in geotechnical engineering, Bangkok : five days of lectures and computing sessions on numerical modelling and analysis (with Dr A. Cividini, Dr M.A. Coulthard, Dr T.G. Davies, Dr Y. Honjo, Professor S. Sakurai, Dr S. Valliappan) (organised by Professor A.S. Balasubramaniam, Asian Institute of Technology)
- Feb 1993 City University : colloquium on Selection of parameters for numerical geotechnical predictions
- Mar 1993 University of Surrey : lectures on Applications of critical state soil models
- Apr 1993 University of Rome 'La Sapienza' : 5 days of lectures on Plasticity in soil mechanics : Soil modelling
- Sept 1993 3rd Workshop on Localisation and bifurcation theory for soils and rocks, Aussois : invited participant and discussion leader : contribution : Observations of localisation in model tests on sand
- Sept 1993 Danish Geotechnical Institute, Lyngby : 6 days of lectures on Design analysis in geotechnical engineering : Implementation of geotechnical limit state design according to Eurocode 7 (with Professors N. Krebs Ovesen, S. Nordal and L. Grande) : COMETT course organised by Norwegian Institute of Technology, Trondheim
- Apr 1994 Institution of Engineers, Malaysia : 4 days of lectures on Finite element applications in geotechnical engineering (with Dr T.G. Davies)
- Sept 1994 Nagoya Institute of Technology : lecture on Physical modelling of group behaviour in stone column foundations
- Sept 1994 Gifu University : lecture on Strain softening and state parameter for sand modelling
- Sept 1994 Chubu Branch of the Japan Society for Soil Mechanics and Foundation Engineering, one day seminar on Application of constitutive models to geotechnical problems, Nagoya : lecture on Appropriate technology for geotechnical modelling
- Sept 1994 International Symposium on Prefailure deformation characteristics of geomaterials, Hokkaido, Japan : Discussion leader, session 2b : Modelling of geomaterials
- Sept 1994 Tokyo University : lecture on Analysis of response of slopes in stiff clay to groundwater changes
- Sept 1994 Tokyo Institute of Technology : lectures on Physical modelling of group behaviour in stone column foundations and Mechanical properties of heterogeneous soils
- Sept 1994 Kanazawa University : lectures on Groundwater
- Sept 1994 Kyoto University : lectures on Permeability of anisotropic clay and Mechanical properties of heterogeneous soils
- Sept 1994 local branch of Japan Society for Soil Mechanics and Foundation Engineering, Hiroshima : lectures on Mechanical properties of heterogeneous soils and Physical modelling of group behaviour in stone column foundations
- Oct 1994 Norges Tekniske Høgskole, Trondheim : two days of lectures within two week course on Soil modelling
- Nov 1994 Society for Underwater Technology : lecture on Biological strengthening of marine sediments as part of one day seminar on Recent research in offshore geotechnics and geophysics (A review of projects funded by the Marine Technology Directorate Limited)
- Dec 1994 University of Oxford : colloquium on Soil models
- Mar 1996 Institution of Civil Engineers, Glasgow and West of Scotland Association : lecture on Soil modelling: the art of the possible
- Jul 1996 Cambridge University : lecture on Determination of Cam clay parameters from laboratory tests as part of 4 day course on Advanced geotechnical analysis using the finite element program SAGE CRISP.
- Sept 1996 Society for Earthquake and Civil Engineering Dynamics/Imperial College : lecture on Seismic behaviour of foundations as part of 2 day course on Practical seismic design and repair of structures.

- Oct 1996 Society for Earthquake and Civil Engineering Dynamics/Scottish Geotechnical Group : lecture on Determination of soil properties for seismic design (with Tom Aldridge (Fugro))
- Apr 1997 British Geotechnical Society : discussion meeting on Piled foundations in weak rock (with Fin Jardine (CIRIA), Gus Wallace and John Gannon (Babtie Group))
- June 1997 ETH, Zurich : lecture on Group effects in model stone column foundations.
- June 1997 School of Engineering, University of Exeter : lecture on Stiffness of soils.
- July 1997 Cambridge University Programme for Industry: lecture on Determination of Cam clay parameters as part of 4 day course on Advanced geotechnical analysis using the finite element program SAGE CRISP.
- Sept 1997 Society for Earthquake and Civil Engineering Dynamics: lecture on Determination of soil properties for seismic design (with Tom Aldridge (Fugro))
- Sept 1997 Tokyo Institute of Technology: lecture on Geotechnical modelling on the Bristol shaking table
- Oct 1997 British Geotechnical Society/ICE Ground Board : discussion meeting on Observational methods in geotechnics (with Duncan Nicholson (Arup), Charles Penny (Balfour Beatty))
- Mar 1998 Society for Earthquake and Civil Engineering Dynamics: keynote lecture at Conference on Seismic design practice into the next century: Deformation properties of soils for dynamic analyses
- Oct 1998 Norwegian University of Science and Technology, Trondheim: one day of lectures within one week course on Soil modelling
- Nov 1998 Institution of Structural Engineers, Scottish local association, Edinburgh: lecture on Modelling of soil:structure interaction
- Jan 1999 Università di Roma 'La Sapienza': lectures on Modelling of soil:structure interaction and on Hierarchical development of constitutive models for soils
- May 1999 University of Cambridge: colloquium: 'Some structural consequences of soil:structure interaction'
- Sept 1999 Imperial College: second opponent for debate: 'Continuum models have passed their sell-by date'
- Apr 2000 Engineering Professors' Council, Annual Congress, Cambridge: session on Output standards in engineering
- July 2000 University of Minnesota: lecture 'A tale of two models'
- Oct 2000 Norwegian University of Science and Technology, Trondheim: one day of lectures within one week course on Soil modelling
- Nov 2000 University of Trento: lecture on 'Some structural consequences of soil:structure interaction'
- Dec 2000 University of Rome 'La Sapienza': lecture on 'Hierarchical models for sands and natural clays' as part of International Doctorate programme
- Apr 2001 Institution of Civil Engineers, North West Association Geotechnical Group, Manchester: lecture on 'Some structural consequences of soil:structure interaction'
- May 2001 IUTAM Symposium on 'Material instabilities and effect of microstructure', Austin: invtd lecture on 'Some observations of volumetric instabilities in soils'
- May 2001 University of British Columbia, Vancouver: lecture 'Soil mechanics research: past, present and future'
- May 2001 University of Bristol, Centre for Environmental and Geophysical Flows, lecture 'Some observations of volumetric instabilities in soils'
- June 2001 Politecnico di Torino: 2 days of lectures within 5 day course: Constitutive models for clays, sands and soft rocks
- Aug 2001 Eastern Mediterranean University, Famagusta: 4 days of lectures on : Geotechnical modelling and critical state soil mechanics
- Aug 2001 15th International Conference on Soil Mechanics and Geotechnical Engineering, Istanbul: Grand inquisitor for Satellite conference on 'Fundamentals of soil behaviour' (TC35)
- Nov 2001 University of Rome 'La Sapienza': lecture on 'Some structural consequences of soil-structure interaction' as part of International Doctorate programme
- May 2002 Wells Science and Engineering Society: lecture 'The answer lies in the soil'
- Oct 2002 Norwegian University of Science and Technology, Trondheim: one day of lectures and tutorials within one week course on Soil modelling
- Dec 2002 Keynote lecture: 'Yielding in soils: constitutive fiction and experimental observation': Workshop of Young Doctors in Geomechanics, W(H)YDOC 02, Ecole Nationale des Ponts et Chaussées, Paris.
- May 2003 Institute of Industrial Science, Komaba, University of Tokyo: lecture 'Some observations of volumetric instabilities in soils'
- May 2003 Tokyo Institute of Technology: lecture 'One-dimensional introduction to seepage'
- May 2003 Nippon Steel: lecture 'Soil stiffness'
- May 2003 Tokyo University: lecture 'Yielding of soils: constitutive fiction and experimental observation'
- May 2003 Tokyo University: lecture 'Some observations of volumetric instabilities in soils'
- May 2003 Port and Airport Research Institute: lecture 'Some structural consequences of soil:structure interaction'
- May 2003 Japanese Geotechnical Society, Tokyo: lecture 'Some structural consequences of soil:structure interaction'
- May 2003 Institute of Industrial Science, Komaba: Foundation for the Promotion of Industrial Science Lecture: 'Soil stiffness and dynamic modelling'
- May 2003 Chubu Branch, Japanese Geotechnical Society, Nagoya: lecture 'Some structural consequences of soil:structure interaction'
- Sept 2004 Norwegian University of Science and Technology, Trondheim: one day of lectures and tutorials within one week course on Soil modelling
- May 2005 University of Rome 'La Sapienza': one week course on 'Geotechnical modelling and critical state soil mechanics' as part of International Doctorate programme

- June 2005 Boskalis Westminster, Papendrecht: two day course on ‘Geotechnical modelling and critical state soil mechanics’
- Sept 2005 16<sup>th</sup> International Conference on Soil Mechanics and Geotechnical Engineering, Osaka: panellist, session 1b: Laboratory testing (II): Strength, large deformation and hydraulic properties.
- Oct 2005 ALERT, Aussois: organiser of workshop day: Geostructural dynamics and waves in geomaterials.
- Nov 2005 Invited member of NSF workshop: Nonlinear modelling of geotechnical problems: from theory to practice, Johns Hopkins University, Baltimore
- Nov 2005 Norsk Geoteknisk Forening, Oslo: 20<sup>th</sup> Bjerrum Lecture: ‘The magic of sands’.
- Sept 2006 Keynote lecture: ‘Soil: discontinuum – continuum’. International Symposium on Geomechanics and Geotechnics of Particulate Media, IS-Yamaguchi 2006
- Sept 2006 Norwegian University of Science and Technology, Trondheim: two days of lectures and tutorials within one week course on Soil modelling
- Jan 2007 University of Catania: 4 day course on ‘Geotechnical modelling and critical state soil mechanics’ as part of International Doctorate programme
- May 2007 University of Naples Federico II: 5 day doctoral course on ‘Geotechnical modelling and critical state soil mechanics’
- May 2007 Clifton Rotary Club: lecture: ‘The magic of sands’
- Jun 2007 Keynote lecture: Modelling of dynamic soil problems. 4<sup>th</sup> International Conference on Earthquake Geotechnical Engineering, Thessaloniki
- Nov 2007 Lecture: ‘Changing grading of soil: a modelling challenge’. Hong Kong University
- Nov 2007 Lecture: ‘Soil: particle-continuum duality: intermediate scales’. Hong Kong University of Science and technology.
- Nov 2007 Lecture: ‘The magic of sands’. Hong Kong Institution of Engineers, Geotechnical Division.
- Nov 2007 Invited lecture: ‘Multidisciplinary degree programmes within a discipline based engineering faculty’: International Forum on Engineering Higher Education for the 21st Century, Hong Kong Polytechnic University
- Apr 2008 Lecture: ‘Critical states and soil modelling’: Chubu Branch, Japan Geotechnical Society, Nagoya
- May 2008 Lecture: ‘Severn-Trent sand: extension of a soil model’: University of Kyoto
- May 2008 Lecture: ‘Critical states and soil modelling’: Institute for Industrial Science, Tokyo University
- May 2008 Lecture: ‘Critical states and soil modelling’: Yamaguchi University
- May 2008 Lecture: ‘Critical states and soil modelling’: Tokyo Institute of Technology
- May 2008 Invited presentation: ‘Multiaxial testing of granular materials’: Inaugural international conference of the Engineering Mechanics Institute, ASCE, University of Minnesota: Stein Sture Symposium on Geomechanics
- May 2008 Invited presentation: ‘Critical states: inclusion of particle breakage’: Inaugural international conference of the Engineering Mechanics Institute, ASCE, University of Minnesota: Critical states and instabilities in granular materials
- Sept 2008 Keynote lecture: ‘Critical states and soil modelling’: IS-Atlanta: Deformation characteristics of geomaterials.
- Oct 2008 Norwegian University of Science and Technology, Trondheim: two days of lectures and tutorials within one week course on Soil modelling
- Feb 2009 Theme lecture: ‘Particles to continuum: inspirations for modelling’. Lecture: Workshop, From shear bands to rapid flow, Monte Verità, Ascona
- Jun 2009 Centro Internazionale di Strutturale e Meccanica, CISM, Udine: Co-organiser of course on ‘Mechanical behaviour of soils under environmentally induced cyclic loads’, five lectures on ‘Constitutive modelling’, one lecture on ‘Macroelement modelling’
- Jun 2009 Senior Lecture: ‘Stresses in granular materials’: Workshop, Deformation and failure of granular materials, Masseria Salamina, Politecnico di Bari
- Oct 2009 ALERT Geomaterials, Aussois: Co-organiser of Workshop ‘Geomechanics at the small scale’ (with Pierre Delage, CERMES, ENPC)
- Jan 2010 Discovery Day lecture: ‘Building on sand’: University of Dundee
- Feb 2010 ‘Modelling mechanical consequences of erosion’ Poulos Lecture, Australian Geomechanics Society, Sydney Chapter
- Feb 2010 ‘Building on sand: Microfeatures and intermediate scales’: Lecture, University of New South Wales, Sydney.
- Feb 2010 ‘Building on sand: Microfeatures and intermediate scales’: Lecture, University of Wollongong
- Feb 2010 Two days of lectures on ‘Saturated soil modelling’: Griffith University, Brisbane
- Feb 2010 ‘The magic of sands: Modelling mechanical consequences of erosion’: Lecture, Australian Geomechanics Society, Perth Chapter
- May 2010 ‘Stresses, strains and intermediate scales in granular materials’: Lecture, Politecnico di Bari
- May 2010 ‘The magic of sands: modelling the mechanical consequences of erosion’: Lecture, Politecnico di Bari
- May 2010 ‘Soil modelling: one-dimensional model; the most widely used soil model – Mohr-Coulomb; hardening plasticity models – Cam clay’: Lecture, Politecnico di Bari.
- Sept 2010 Norwegian University of Science and Technology, Trondheim: two days of lectures and tutorials within one week course on Soil modelling
- Oct 2010 ‘Letters and envelopes’: invited lecture: Sir Alan Muir Wood Memorial Symposium, British Tunnelling Association, Institution of Civil Engineers, London
- Oct 2010 two days of lectures on Soil modelling, Singapore: South-East Asian Geotechnical Society

- Oct 2010 two days of lectures on Soil modelling, Kuala Lumpur: South-East Asian Geotechnical Society
- Oct 2010 ‘The magic of sands: modelling the mechanical consequences of erosion’: Lecture, Institution of Engineers, Malaysia, Petaling Jaya
- Oct 2010 two days of lectures on Soil modelling, Bangkok: South-East Asian Geotechnical Society
- Nov 2010 two days of lectures on Soil modelling, Hanoi: South-East Asian Geotechnical Society
- Nov 2010 ‘The magic of sands: modelling the mechanical consequences of erosion’: Lecture, Taiwan Geotechnical Society, Taipei, Taiwan
- Nov 2010 ‘The magic of sands: modelling the mechanical consequences of erosion’: Lecture, Taiwan Geotechnical Society, Tainan, Taiwan
- Nov 2010 ‘Recent and ongoing research: laboratory geophysics; sand-steel interfaces; roots and fibres’: Lecture, Civil Engineering Day, Kaohsiung University, Kaohsiung, Taiwan
- May 2011 ‘Roots and fibres’: 19<sup>th</sup> Prague Geotechnical Lecture
- May 2011 ‘Sir Alan Muir Wood’: introduction to Sir Alan Muir Wood Prestige Lecture, 14<sup>th</sup> International Symposium on Aerodynamics and Ventilation of Tunnels, Dundee
- Sept 2011 ‘Strengths and weaknesses of using advanced soil models in practical design’: Lead speaker, British Geotechnical Association meeting on Advanced soil models in practical design.
- Nov 2011 ‘Biological modification of soils’: lecture Delft Technical University
- Dec 2011 ‘Biological modification of soils’: lecture, University of California, Davis
- Dec 2011 ‘Stresses, strains and intermediate scales in granular materials’: lecture, University of California, Davis
- Apr 2012 ‘Soils: vices and virtues: spatial awareness’: invited lecture 7<sup>th</sup> Portuguese Geotechnical Congress, Lisbon
- Sept 2012 Norwegian University of Science and Technology, Trondheim: two days of lectures and tutorials within one week course on Soil modelling
- Sept 2012 Technical University, Dresden: lectures and tutorials within one week ALERT Olek Zienkiewicz Course – Summerschool on Constitutive modelling of soils
- Oct 2012 ‘Asymptotic (critical) states’: invited presentation: 2<sup>nd</sup> International Symposium on Constitutive modelling of geomaterials: advances and new applications, Tsinghua University, Beijing
- Oct 2012 Tsinghua University, Beijing: invited seminar ‘Soils and roots – and other modelling challenges’
- Feb 2013 ‘Geotechnical modelling: Step Zero: Less is more’: invited seminar, University of Western Australia
- Mar 2013 ‘Rooting for sustainable performance (modelling interaction of roots and soil’: lecture to British Geotechnical Association on occasion of Cooling Prize Competition, Glasgow
- Aug 2013 ‘Rooting for sustainable performance (modelling interaction of roots and soil’: invited lecture, Northwestern University, Evanston, Illinois.
- Aug 2013 ‘Constitutive modelling of soils: parallel threads’: invited talk, Modelling geomechanics, Professor Nova Symposium, Engineering Mechanics Institute Conference 2013, Northwestern University, Evanston, ASCE.
- Nov 2013 Master class: Geotechnical modelling (2 half days): 1. Elements; 2. Systems. University of Western Australia, Perth
- Apr 2014 ‘Less is more’: invited lecture, Vancouver Geotechnical Society