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Director of **HYDROMET** Research Group, University College Cork.

*Please view website for much of the following details.*

<http://www.ucc.ie/hydromet/>

## EDUCATION

**PhD.** University College Cork, (1989), Environmental Fluid Mechanics - *Overbank Flow in Meandering River Channels*

**M.S.** Colorado State University, (1980), Environmental Fluid Mechanics - *A Wind Tunnel Study of the Space Shuttle*

**M.Eng.Sc.** (part-time) University of New South Wales, Australia. (1976), Structural Eng.

**B.E.** University College Cork, (1972), Civil Engineering

## PROFESSIONAL RECORD

2000-present Associate Professor, Civil & Env Eng Dept., University College Cork

1999-2002 Dean of Graduate Studies, University College Cork

1993-2000 Senior Lecturer, Civil & Env Eng Dept., University College Cork

1989-1993 Lecturer, Civil & Env Eng Dept., University College Cork

1980-1989 Executive Engineer, Cork County Council, Ireland

1978-1979 Graduate Research Engineer, Colorado State University

1974-1977 Structural Eng. John Connell & Associates Consulting Engs, Sydney/Darwin

1973 -1974 Construction Engineer, J.A.Bradshaw, Contractors, Sydney

## RESEARCH INTERESTS

Surface hydrology and land-atmosphere interaction; Climate change - extreme events. Soil hydrology, soil carbon, and soil engineering properties. Flood event analysis, flood forecasting and flood warning. Environmental engineering. Measurement and modelling of greenhouse gas fluxes (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O) from grasslands, peatlands and forestry. Coupling of water, energy and carbon cycles.

## PRINCIPAL TEACHING

CE3009: Engineering Hydrology;

CE4010: Water and Wastewater Engineering;

CE4014: Environmental Engineering Design - Wastewater treatment Plant design.

Structural Analysis: Structural Design (1989-1991).

## PROFESSIONAL SERVICE (Selected)

- Convenor of EPA sponsored Conference on Greenhouse gas fluxes in terrestrial ecosystems in Ireland, at Delgany, County Wicklow, Ireland, Sept. 2007.
- Member of the Steering Group on Sediment Transport Research-HCMEPSERC, Wallingford U.K. (1994-1997).
- Editor for Special Issue of *Physics and Chemistry of the Earth on SVAT* at different scales (1997)
- Editor for Special Issue of *Physics and Chemistry of the Earth on European Water Resources and Climate Change Processes* (1998)
- Editor for Special Issue of *Physics and Chemistry of the Earth on Hydrology and Surface Processes* (1999)
- Editor for Special Issue of *Advances in Water Resources on European Water Resources and Climate Change Processes* (1999)
- Director of EU funded summer school at UCC, June 1997, on European Water Resources and Climate Change Processes.
- Convenor of European Geophysical Society 21st General Assembly, Den Hague (1996) section on, Soil -Vegetation-Atmosphere Transfer at Different Scales.

- Convenor of European Geophysical Society 23rd General Assembly Nice (1998) section on, Hydrology and Surface Processes.
- Member of American Geophysical Union, Large Scale Experimental Working Group. (1994-present).

### REVIEWER OF JOURNALS

*Water Research; Water Resources Research, Physics and Chemistry of the Earth, Advances in Water Resources, Journal of Hydrology; Agriculture & Forest Meteorology; Environmental and Experimental Botany; Boundary Layer Meteorology; Global Change Biology; Journal of Geophysical Research; Journal of Forest Research; Soil Use and Management; Nutrient Cycling in Agroecosystems;*

### HONORS and AWARDS

- Senior Fulbright Fellow at the University of California at Davis (1993-1994)
- Invited Lecturer to NATO Advanced Scientific Institute, Plon, Germany (1995).
- Visiting Scientist, Hydrologic Science, University of California, Davis. (July-1995,1996)
- Visiting Scientist, National Center for Atmospheric Research (NCAR), Boulder, Colorado (Aug.1996).
- Visiting Scientist, University of Virginia (Sep. 1996).
- Visiting Scientist, Johns Hopkins University, Baltimore, (Aug1997).
- Visiting Scientist, at GKSS (Institute of Atmospheric Physics) Geesthacht GE,(Sept. '97)
- Honorary Fellow of the Institution of Engineers Ireland F.I.E.I. (1998).
- Commendation from IAWQ for services as referee to *Water Research* (1998).

### PROFESSIONAL AFFILIATIONS

Fellow of the Institution of Engineers Ireland (F.I.E.I)  
 Member of the Institution of Structural Engineers (M.I.Struct.E)  
 Member of the Institution of Engineers Australia (M.I.E.Aust.) lapsed.  
 American Geophysical Union, member  
 European Geophysical Society member  
 Royal Meteorological Society member  
 International Water Association member  
 American Association for Wind Engineering

### POSITIONS OF RECENT POSTDOCS

Dr.Todd Scanlon – (2002/03). Assistant Professor in Environmental Science at the University of Virginia  
 Dr.Cheng-I-Hsieh – Associate Professor in Bioengineering at the National University of Taiwan  
 Dr.Ken Byrne (2004/07): – Lecturer in Soil Science at the University of Limerick  
 Dr.Paul Leahy (2004/08): –Lecturer in wind energy at University College Cork  
 Dr.Slava Voronovich –(2005/06): Researcher at the Irish Central Statistics Office, Cork.

### RECENT PhD GRADUATES

Dr.Matteo Sottocornola – (2003/07):Researcher at IASMA Research and Innovation Centre – Fondazione Edmund Mach, Environmental and Natural Resources Area, Viote del Bondone, 38100 Trento, Italy.  
 Dr.Anna Laine –(2003/07):Researcher at the Department of Biology, University of Oulu, Oulu, Finland.  
 Dr.Ann-Kristin Koehler (2008/10) Postdoc University of Liverpool  
 Dr. Mikhail Mishurov (2008/10) Postdoc University of Lund, Sweden

### CURRENT and recent POSTDOCS & RESEARCH ASSISTANTS

Dr.Ken Byrne - (start January 2004, left to take up College lecturer post at the UL, June 2008)  
 Dr. Paul Leahy (Postdoc on EPA Extreme Events project start January 2004)  
 Dr. Xianli-Xu (postdoc on EPA Soil Hydrology Project – start July 2008)  
 Dr.Dong-Gill Kim (postdoc on DAFF N2O emissions from Grasslands – start August 2008)  
 Dr.Matthias Peichl (postdoc on CELTICFLUX 2009 – Start October 2009)  
 Ms. Nicola McGoff (Research Assistant on EPA SoilC project – start May 2006)

Mr. Jamie Eaton (Research Assistant on EPA SoilC project – start June 2006)  
Ms. Christine LaPerle (Research Assistant on COFORD project – start September 2007)  
Mr. Kilian Murphy (instrument technician - left in May 2008 to take up permanent post in another dept. UCC.)  
Mr. Neluis Foley ((instrument technician on EPA projects – start June 2008.)  
Mr. Jimmy Casey (instrumentation technician on DAFF project – start June 2007)

## **CURRENT GRADUATE STUDENTS**

Mr. Michael Wellock (PhD, 2007-2011); Soil carbon and GHG fluxes from Irish Forests (COFORD)  
Mr. Ciaran Lewis (PhD, 2008-2011); Soil Hydrology, land use and climate change (EPA)  
Mr. Rashid Rafique (PhD, 2008-2011): Measurement and modelling N<sub>2</sub>O fluxes from grasslands

## **RECENT GRADUATE STUDENTS**

Dr. Mikhail Mishurov (PhD 2010). Nitrous Oxide emissions by eddy covariance  
Dr. Ann-Kristin Koehler (PhD 2010). Carbon balance of a pristine blanket peatland.  
Dr. Matteo Sottocornola (PhD, 2007). 4 yrs observations of CO<sub>2</sub>, H<sub>2</sub>O and energy fluxes in a bog  
Dr. Anna Laine (PhD, 2006) Carbon gas fluxes in an Irish lowland blanket bog  
Dr. Gerry Murphy (PhD, 2004) joint supervision. Benefits of integrated treatment of wastes for energy  
Mr. Ken Byrne (P/T, M.Eng.Sc, 2007-2010) Measurement and modelling of carbon stocks and fluxes in intensively managed grasslands (EPA)  
Mr. Sam Crowley (P/T M.Eng.Sc, 2007-2010); Fats Oils and Grease from Restaurants (Industry)  
Ms. Ann Brune (M.Eng.Sc, 2007) Comparison of the hydrological behaviour of Irish catchments  
Mr. Julien Gillet (M.Eng.Sc, 2006) Phosphorus loss to water in the Lee catchment: a spatial analysis.  
Mr. Paul Guero (M.Eng.Sc, 2006) Rainfall and flood hydrograph analysis in the Munster Blackwater  
Mr. Emmanuel Steinmann. (M.Eng.Sc, 2005) Flood forecasting using a Physical rainfall-runoff model  
Ms. Delphine Lawton (M.Eng.Sc, 2005). Modelling of CO<sub>2</sub> using Pasim at a grassland site  
Ms. Vesna Jaksic (M.Eng.Sc, 2004). Observations and modelling of CO<sub>2</sub> from grasslands  
Mr. Gary Corcoran (M.Eng.Sc, 2004). A flood warning system for the Munster Blackwater  
Ms. Marie Berthier (M.Eng.Sc, 2004). ANN modelling of streamflow and phosphorus from grassland  
Ms. Fahmida Khandokar (M.Eng.Sc, 2003). Phosphorus in soils in pasture farms subject fertilisation  
Mr. Ciaran Lewis (M.Eng.Sc, 2003). Phosphorus, nitrogen and SS loss from soil to water in grasslands  
Ms. Charlotte LeBris (M.Eng.Sc, 2003). 1 year observations & modelling of CO<sub>2</sub> from grasslands  
Mr. Yan Lacaze (M.Eng.Sc, 2003). SVAT modelling of a small grassland catchment

## **IRISH AND NON-IRISH INTERNS**

2009 - Ms. Yvonne Murphy  
2009 - Mr. Francois Clement  
2009/10 - Mr. Paul Mathijssen  
2009 - Ms. Gaelle LeTreur  
2009 - Mr. Hadrien Robin  
2009 - Ms. Valerie Piaux – Ecole Polytechnique , Paris  
2010 – Mr. Pierre Cloteau -Grenoble  
2010- Ms. Manuelle Richieux - ENTPE

## HYDROMET - RESEARCH GRANTS AWARDED - 2000 to present.

No.	Funding Agency	Title	Amount € euro	Dates
26	EPA	Field Campaign at Dripsey, Cork for inter-comparison of Eddy Covariance instrumentation for N <sub>2</sub> O CO <sub>2</sub> and CH <sub>4</sub> measurements (Ref: 2010-CCRP-SS 1.1)	5,960.	Aug to Nov 2010
25	EPA	Update of eddy covariance stations and Integrated analysis and model development	409,111	2008-11
24	EPA	Re-analysis and up-scaling of CO <sub>2</sub> emission values for Irish grasslands and peatlands (Postdoc Dr. Matteo Sottocornola).	183,386	2008-10
23	Dept. of Ag. & Food	Quantification of the potential of white clover to lower GHG emissions from Irish grassland-based dairy production	156,000	2008-10
22	Dept. of Ag. & Food	Nitrous Oxide emissions from Irish grasslands: current emissions and future needs.	513,983	2007-09
21	EPA	Interactions of soil hydrology, land use and climate change and their impacts on soil quality	499,907	2008-10
20	EPA	Extreme weather, climate shifts and natural disasters in Ireland	147,000	2008-09
19	EPA	Soil carbon in bio-energy crops - a source or sink.	225,703	2008-09
18	EPA	Evaluation of models (Pasim, Rotc, Century, DnDc) for simulation of carbon cycling at, field and regional scale.	155,266	2006-07
17	EPA	Total carbon balance of a blanket peatland	90,000	2007-10
16	EPA	Measurement and modelling of soil carbon stocks and stock changes in Irish soils.	293,604	2006-08
15	EU	NITROEUROPE - The nitrogen cycle and its influence on European greenhouse gas balance	109,000	2006-10
14	COFORD	Soil carbon stock changes and greenhouse gas fluxes in Irish forests	464,096	2007-09
13	OPW	Munster Blackwater Raingage and Flood Warning	63,000	2005-08
12	OPW	Flood Studies Update -Flood Event Analysis	64,600	2006-10
11	EU	CARBOEUROPE - Assessment of the European terrestrial carbon balance	114,000	2004-08
10	EPA	Four years of observations of CO <sub>2</sub> , water and energy budgets and vegetation patterns in an Atlantic blanket bog	75,000	2004-07
9	EPA	Quantification of the components of the carbon budget at farm scale and thus quantification of site as source or sink	126,879	2004-05
8	TEAGASC	Opportunities for carbon sequestration in Irish grasslands	30,000	2003-04
7	EPA	Carbon gas fluxes in an Irish lowland blanket bog	75,000	2004-06
6	EPA	CELTICFLUX - Measurement and modelling greenhouse gas fluxes (CO <sub>2</sub> , N <sub>2</sub> O) from grasslands and peatlands	871,000	2002-07
5	HEA -PRTL3	Measurement and modelling of environmental risk associated with phosphorus from agricultural sources	176,003	2002-08
4	IRCSET	Land-Atmosphere exchange of Greenhouse gases (CO <sub>2</sub> , N <sub>2</sub> O) for Irish pasture and peatland sites	83,095	2002-03
3	EPA	Eutrophication from agricultural sources - soil & phosphorus, catchment studies (€812,000)	326,154	2002-05
2	EU INCO-COPERNICUS	The response of water flows of the Boreal forest region at the Volga's sources area to climatic and land-use changes	66,000	2000-02
1	Cork Council + OTT-Hydrometry	Flooding and flood warning of the Munster Blackwater	40,000	1999-01
			<b>€5,369,837</b>	

## **PUBLICATIONS**

### Books in Print

1. Kiely Gerard. (1997). *Environmental Engineering*. McGraw Hill Europe. May 1997.pp.990  
Number of books sold in English version is **9,447** up to 2006.  
Also translated into Spanish (Aug.99) and Korean (April 1999).  
The compulsory text on Principles of Environmental Engineering for admission to chartered engineer status in Canada
2. Galvin T., and G.Kiely, (1997). *Solutions Manual to Environmental Engineering* by Gerard Kiely, McGraw Hill Europe. pp81
3. Kiely G., E.J.McKeogh, and J.P.J.O'Kane. (1991), *Environmental Engineering*. Proceedings of 1st Irish Environmental Engineering Conference. Allied Print, Cork, March.pp377

### **A: PEER REVIEW JOURNAL PAPERS - IN REVIEW (submitted)**

1. Wellock M., Laperle C., Kiely G. (2011). What is the impact of afforestation on the carbon stocks of Irish mineral soils. Submitted to: *Forest Ecology and Management* (March, 2011).
2. Wellock M., Reidy B., Laperle C., Bolger T., Kiely G. (2011). Soil carbon stocks of afforested peatlands in Ireland. Submitted to: *Forestry: An international journal of Forest Research*. (Jan, 2011).
3. Wellock M., Laperle C., Peichl M., Kiely G. (2011). Changes in ecosystem carbon stocks in a grassland-ash afforestation chronosequence in Ireland. Submitted to: *Forest Ecology and Management* (Jan, 2011).
4. Rafique R., Peichl M., Hennessey D., and Kiely G. (2011). Evaluating management effects on nitrous oxide emissions from grasslands using the process based model DNDC. Submitted to *Soil Use and Management*. Feb. 2011.
5. Rafique R., Hennessey D., and Kiely G. (2011). What are the impacts of grazing and cutting events on the N<sub>2</sub>O dynamics in a humid temperate grassland? Submitted to *Atmospheric Environment*. Feb. 2011.
6. M. Groenendijk, A. J. Dolman, M. G.Kiely, A. Arain, A. Arneeth, D. Bonal, A. Cescatti, K. Davis, D. Dragoni, B. G. Drake, J. H. C. Gash, K. Klumpp, A. Knohl, A. Lindroth, R. Leuning, M. Lund, B. Marcolla, M. K. van der Molen, L. Montagnani, E. Moors, A. D. Richardson, O. Roupsard, H. Verbeeck, G. Wohlfahrt. Climatic and phenological controls on ecosystem photosynthetic model parameters  $V_{cm}$  and  $\alpha$ . Submitted to *Global Change Biology*. March 2011.
7. Karin Rebel, Richard de Jeu, Philippe Ciais, Nicolas Viovy, Shilong Piao, Gerard Kiely and A. Johannes Dolman. (2011). A Global Analysis of Satellite Derived and DGVM Surface Soil Moisture Products. *HESS – Hydrology and Earth System Science*. Submitted March 2011.
8. Peichl, M., N.Leave, G. Kiely (2010). Disparate patterns of above- and belowground ecosystem biomass, carbon and nitrogen allocation between recently afforested grassland and adjacent intensively managed grassland. *Plant and Soil*. Submitted Dec. 2010.
9. Peichl, M., O.Carton, G. Kiely (2010). Contrasting effects of management regimes on seasonal and inter-annual carbon dioxide and energy exchange in intensively managed temperate grassland. *Agriculture and Forest Meteorology*. Submitted Dec. 2010.
10. Mishurov M. and Kiely G. (2010). Gap-filling techniques for the annual sums of nitrous oxide fluxes. *Agriculture and Forest Meteorology*. Submitted October 26, 2010. response submitted March 2011.
11. Wen Liu, Xianli Xu, Gerard Kiely. Spatial variability of remotely sensed soil moisture in a temperate-humid grassland catchment. *Ecohydrology* (2010).
12. Jung M, .....Kiely G., etc (2011). Global patterns of land-atmosphere fluxes of carbon dioxide, latent heat, and sensible heat derived from eddy covariance, satellite, and meteorological observations. Submitted to *Journal of Geophysical Research –Biogeosciences*. manuscript 2010JG001566.
13. Tomelleri, E., Carvalhais, N, Migliavacca, M., Cescatti, A., Kiely, G., Margolis, H., Richardson, A.D., Reichstein, M.and FLUXNET members. North Atlantic Oscillation effects on the carbon budget of Europe and North America.. *Journal of Geophysical Research – Biogeosciences*. (submitted Oct. 2010).
14. Xu, X., Liu, W., Lewis, C., Albertson, J.D., Kiely G. Fitting particle size distribution (PSD) and estimating soil water retention shape parameter n for the BEST procedure *Journal of Plant Nutrition and Soil Science* (Submitted in June 2010).
15. Xu, X., Lewis, C. Liu, W., Albertson, J.D., Kiely, G. Analysis of single-ring infiltrometer data: comparison of BEST and Wu methods. *Geoderma* (Submitted in August 2010).
16. Zhang, C., Tang, Y., Xu, X., Kiely G. 2011. Towards spatial geochemical modelling: use of geographically weighted regression for mapping soil organic carbon contents in Ireland. Submitted to *Applied Geochemistry* (Nov. 2010)

17. Zhang, C., Tang, Y., Xu, X., [Kiely G.](#) 2011. Integration of environmental factors in geographically weighted regression to improve interpolation of soil organic carbon contents in Ireland. *Science of the total environment* (In review)
18. Francis Ludlow, Paul Leahy, Enda Murphy, Mark Hennessy, David Taylor, Paul Mayewski, James Killen, Mike Baillie and [Ger Kiely](#). Volcanic Forcing of Late-Holocene North Atlantic Climate” (2010). *Nature* (submitted)
19. Clement F. Peichl M., Sottocornola M., and [Kiely G.](#) (2010). Estimation of net ecosystem carbon exchange for the Republic of Ireland combining MODIS and Tower data. *Remote Sensing in Environment*. (submitted Sept., 2010)
20. Eaton, J.M., N.M. McGoff, P. Leahy, K. Byrne, and [G. Kiely](#). (2010) A new suite of equations to estimate organic carbon content from loss on ignition for multiple Irish soil types. *Irish Journal of Food and Agricultural Research*. Submitted (2010).
21. C. Lewis, J. Albertson, X. Xu and [G. Kiely](#). (2011) Spatial variability of hydraulic conductivity and bulk density along a blanket peatland hillslope. *Hydrological Processes*. Accepted subject to revisions.
22. Shuli Niu, Yiqi Luo, Shenfeng Fei, Wenping Yuan, Zhongda Zhang, David Schimel, Brian Amiro, Christof Ammann, M. Altaf Arain, Almut Arneth, Marc Aubinet, Alan Barr, Jason Beringer, Christian Bernhofer, Andrew T. Black, Nina Buchmann, Alessandro Cescatti, Jiquan Chen, Peter Kenneth J. Davis, Ebba Dellwik, Ankur R. Desai, Han Dolman, Bert G. Drake, Louis Francois, Damiano Gianelle, Allen Goldstein, Lianhong Gu, Carole Helfter, Takashi Hirano, David Y. Hollinger, Ivan Janssens, Mike Jones, [Gerard Kiely](#), Thomas E Kolb, Werner L. Kutsch, Peter Lafleur, Beverly E. Law, Marcy Litvak, Denis Loustau, Michal Marek, Giorgio Matteucci, Timothy A. Martin, Leonardo Montagnani, Eddy Moors, J. William Munger, Asko Noormets, Walter Oechel, Janusz Olejnik, Dario Papale, Kyaw Tha Paw U, Kim Pilegaard, Serge Rambal, Antonio Raschi, Andrew D. Richardson, Scott Saleska, Russ Scott, Guenther Seufert, Donatella Spano, Paul Stoy, Mark A. Sutton, Timo Vesala, Steve Wofsy, Georg Wohlfahrt, Dan Yakir, Bai Yang . (2011). Thermal Optimality of Net Ecosystem Exchange of Carbon over Time and Space. Submitted to *Science* . Oct. 2010. Manuscript Number:1199992
23. Khandokar F., Warner S., Lewis C., Morgan G., [Kiely G.](#) (2011). Soil phosphorus balances with soil test P as indicators of potential loss of P from soil to water. *Soil Use Management* (accepted subject to revisions).

**B: PEER REVIEWED JOURNAL PAPERS - PUBLISHED 670 pages to date: >600 citations.**

2011 ??? pages

24. Xu, X., Liu, W., Zhang, C., [Kiely, G.](#) (2011). Estimation of soil organic carbon stock and its spatial distribution in the Republic of Ireland. *Soil Use and Management* doi:10.1111/j.1475-2743.2011.00342.x. [ 7 pages: Impact factor 2.1]
25. Rafique R., D. Hennessy and [Kiely G.](#) (2011). Nitrous oxide emission from grassland under different management systems. *Agriculture, Ecosystems and Environment* doi:DOI: 10.1007/s10021-011-9434-x. [ 7 pages: Impact factor 2.1]
26. Peichl M., Leahy P., [Kiely G.](#) (2011). Six-year Stable Annual Uptake of Carbon Dioxide in Intensively Managed Humid Temperate Grassland. *Ecosystems* 14: 112–126 doi:10.1007/s10021-010-9398-2. [ 7 pages: Impact factor 2.1]
27. Leahy P. and [G. Kiely G.](#) (2011). Short duration rainfall extremes in Ireland: influence of climatic variability *Water Resources Management* 25:987–1003 doi:10.1007/s11269-010-9737-2. [12 PAGES. Impact Factor 2.0]
28. Asama Z.Z., T.J. Poulsen, A.S Nizami, R. Rafique, [G. Kiely](#), J. D Murphy (2011). How can we improve biomethane production per unit of feedstock in biogas plants? *Applied Energy* 88(6):2013–2018 doi:10.1016/j.apenergy.2010.12.036. [ 7 pages: Impact factor 2.1]
29. Xu, X., Liu, W., [Kiely G.](#) (2011) Modeling soil organic carbon (SOC) change of grassland in response to climate change: effects of measured versus modeled carbon pools for initializing RothC model *Agriculture, Ecosystems and Environment* . In press Dec. 2010. [ 7 pages: Impact factor 2.1]
30. Koehler A-K., Sottocornola M., and Kiely G. (2011). How strong is the carbon sequestration of an Atlantic blanket bog. *Global Change Biology*. (2010). Doi.10.1111/j.1365-2486.2010.0218.x [ 15 pages: Impact factor 5.88]
31. Jarvis A., Mallick K., Wohlfahrt G., Gough C., Hirano T., Kiely G., Miyata A., Yamamota S. M (2011). Components of near surface energy balance derived from satellite soundings: i. Net available energy. *Atmospheric Chemistry and Physics Discussions*. (Submitted April 2010, Accepted October 2010).
32. Mallick K., Jarvis A., Wohlfahrt G., Gough C., Hirano T., Kiely G., Miyata A., Yamamota S. M (2011). Components of near surface energy balance derived from satellite soundings: ii. Latent heat flux. *Atmospheric Chemistry and Physics Discussions*. (Submitted April 2010, Accepted October 2010)

33. Rafique R., Poulsen T.G., Nizami A-S., Asam Z.Z, Murphy J.D., Kiely G. (2010). Effect of thermal, chemical and thermo-chemical pre-treatments to enhance methane production. *Energy* V?????. pp.1-6. in press [ 7 pages: Impact factor 2.1]

#### 2010 149 pages

34. Laine A, Byrne KA, Kiely G, Tuittila E-S (2009) The short-term effect of altered water level on carbon dioxide and methane fluxes in a blanket bog. *Suo* (Suoseura – Finnish Peatland Society).60: 65-83. press [ 19 pages: Impact factor ??]
35. Chuixiang Yi, Daniel Ricciuto,.....Kiely G. et al., (2010). Climate control of terrestrial carbon exchange across biomes and continents. *Environmental Research Letters*. Vol.5.No.3: doi: [10.1088/1748-9326/5/3/034007](https://doi.org/10.1088/1748-9326/5/3/034007) [ 10 pages: Impact factor 3.34]
36. Sottocornola M., and Kiely G. (2010). Energy fluxes and evaporation mechanisms in an Atlantic bog in south west Ireland. *Water Resources Research*. Vol.46, W11524, doi: 10.1029/2010WR009078, 2010. [ 15 pages: Impact factor 2.45]
37. Mishurov M. and Kiely G. (2010). N<sub>2</sub>O flux dynamics of grassland undergoing afforestation. *Agriculture, Ecosystems and Environment*. Vol. 139; Issue 1-2. pp ????? [ 7 pages: Impact factor 3.13]
38. Kim D.G., Mishurov M. and Kiely G. (2010). Effect of increased N use and dry periods on N<sub>2</sub>O emissions from a fertilised grassland. *Nutrient Cycling in Agroecosystems* . DOI: 10.1007/s10705-010-9365-5 in press. [14 pages: Impact factor 1.35]
39. Sottocornola M., and Kiely G. (2010). Hydrometeorological controls on the CO<sub>2</sub> exchange variation in an Irish blanket bog. *Agriculture and Forest Meteorology* Vol. 150: Issue 2: pp.287–297. [ 11 pages: Impact factor 3.66]
40. Martín F. Garbulska, Josep Peñuelas, Dario Papale, Jonas Ardö, Michael L. Goulden, Gerard Kiely, Andrew D. Richardson, Eyal Rotenberg, Elmar M. Veenendaal, and Iolanda Filella. (2010). Patterns and controls of the variability of radiation use efficiency and primary productivity across terrestrial ecosystems. *Global Ecology & Biogeography*, 2010. Vol.19; Issue 2. pp.253-267. [ 15 pages: Impact factor 5.91]
41. Gilmanov TG, Aires L, Barcza Z, Baron VS , Beileli L, Beringer J, Billesbach D, Bonal D, Bradford J, Ceschia E , Cook D, Corradi C, Frank A , Gianelle D , Gimeno C, Gruenwald T, Guo HQ, Hanan N, Haszpra L, Heilman J, Jacobs A , Jones MB, Johnson DA , Kiely G, Li SG , Magliulo V, Moors E , Nagy Z, Nasyrov M , Owensby C, Pinter K , Pio C, Reichstein M, Sanz MJ, Scott R, Soussana JF, Stoy PC, Svejcar T, Tuba Z, Zhou GS. (2010). Productivity, Respiration, and Light-Response Parameters of World Grassland and Agroecosystems Derived From Flux-Tower Measurements. *Rangeland Ecology & Management* Vol. 63 Issue: 1 pp. 16-39, Jan 2010. press [ 24 pages: Impact factor 1.11]

#### 2009 50 pages

42. Xu X and Kiely G. (2009). Estimation and analysis of soil hydraulic properties through infiltration experiments: comparison of BEST and DL fitting methods. *Soil Use and Management* .Vol.25: Issue 4, pp.354-361. Dec.2009. [8 pages; Impact Factor 2.03]
43. Sottocornola M., Laine A., Kiely G., Byrne K., Tuittila E.S. (2009). Vegetation and environmental variation in an Atlantic blanket bog in South-western Ireland. *Plant Ecology*. Vol.203: Issue 1. pp: 69-81. doi:10.1007/s11258-008-9510-2. Jul. 2009. [13 pages; Impact Factor 1.74]
44. Koehler A,K, Murphy K, Kiely G, Sottocornola M. (2009). Fluvial Loss of DOC from an Atlantic Bog. *Biogeochemistry* . Vol. 95: Issue 2-3. pp.231-242. Sep. 2009. [10 pages; Impact Factor 2.96]
45. Hsieh C-I, Huang C-W., Kiely G. (2009). Long term estimation of soil heat flux by single layer soil temperature. *International Journal of Biometeorology*. Jan.2009. Vol. 53: Issue 1. pp 113-123. [11 pages; Impact Factor 2.08]
46. Warner S., Kiely G., Morgan G., O'Halloran J. (2009). Does quantifying the antecedent flow conditions improve stream phosphorus export estimation? *Journal of Hydrology*. Vol.387: Issue 1-2; pp. 97-104. Nov.15, 2009. [8 pages; Impact Factor 2.43]

#### 2008 28 pages

47. Leahy P., Kiely G., Corcoran G. (2008). Structural optimization and input selection of an artificial neural network for river level prediction. *Journal of Hydrology*, Vol. 355, Issue 1-4, pp. 192-201. June 2008. [10 pages; Impact Factor 2.43]
48. Eaton J, McGoff N., Leahy P., Byrne K., Kiely G. (2008). Land cover change in Ireland 1851-2000. *Climatic Change*. Vol. 91: Issue 3-4. pp. 317-334, DOI 10. 1007/s10584-008-9412-2. Dec. 2008. 18 pages. [18 pages; Impact Factor 3.70]

2007 66 pages

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#### **D: BOOK CHAPTERS**

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