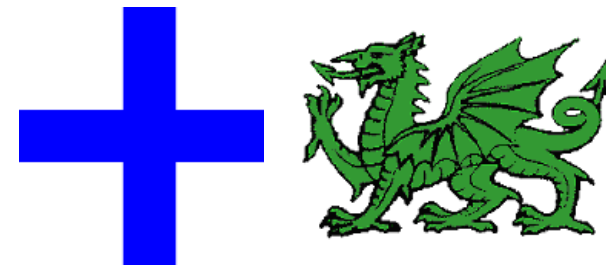


SPONSORS



TENTATIVE PROGRAMME

| TIME | JULY 11 | JULY 12 | JULY 13 | JULY 14 |
|-----------------|--|---|---|--|
| 08:00am-09:30am | Documentation Distribution | Poster Session 1 Posters Research (P1 & P2) | Poster Session 2 Posters R&D and OHGs | |
| 09:30am-10:00am | Open Session Key-Lecture 1 (Paper RL1) | Technical Session n.º 3 (Papers 13, 24, 25-26, 29, 32 & Discussion) | Technical Session n.º 6 (Papers 1, 15, 19, 27, 28 & Discussion) | |
| 11:00am-11:30am | Coffee-break | Coffee-break | Coffee-break | |
| 11:30am-01:00pm | Key-Lecture 2 (Paper RL2) Key-Lecture 3 (Paper RL3) | Technical Session n.º 4 (Papers 5, 6, 7, 10, 11 & Discussion) | Round Table n.º 2 "How to Achieve Quantity and Quality Goals of the Water Framework Directive in the Celtic Countries?" (Papers RT2P1, RT2P2, RT2P3 & Discussion) | Post-Symposium Excursion to the Minho river valley and/or to the Gerês National Park |
| 01:00pm-02:30pm | Lunch | Lunch | End Session Lunch | |
| 02:30pm-04:00pm | Technical Session n.º 1 (Papers 3, 4, 10, 22, 23 & Discussion) | Round Table n.º 1 "Climate Variability in Celtic Countries" (Papers RT1P1, RT1P2, RT1P3 & Discussion) | Technical Excursion to visit sites of hydrological and historical interest in Northern Portugal | |
| 04:00pm-04:30pm | Coffee-break | Coffee-break | | |
| 04:30pm-06:30pm | Technical Session n.º 2 (Papers 2, 12, 14, 17, 21, 33 & Discussion) | Technical Session n.º 5 (Papers 8, 9, 16, 20, 30, 31 & Discussion) | | |
| | Ice-Breaking Party | Conference Dinner | | |



WATER IN CELTIC COUNTRIES:

Quantity, Quality and Climate Variability

BULLETIN 2

The Fourth Inter-Celtic Colloquium on Hydrology and Management of Water Resources

to be held at Universidade do Minho, Guimarães, Portugal, July 11-14, 2005

Organised by



LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL



ASSOCIAÇÃO PORTUGUESA DOS RECURSOS HÍDRICOS



International Association of Hydrological Sciences
Association internationale des sciences hydrologiques



Universidade do Minho



Associação Portuguesa para Estudos de Saneamento Básico

BACKGROUND

The **First Inter-Celtic Colloquium on Hydrology and Management of Water Resources** was organised in Rennes, Brittany, France, in July 1996. Following the success of the First Colloquium, the **Second Inter-Celtic Colloquium** "Water in the Celtic World: Managing Resources for the 21st Century", was held in Aberystwyth, UK, during July 2000. The **Third Inter-Celtic Colloquium** "Celtic Water in European Framework – Pointing the Way to Quality" was held in Galway, Ireland, during July 2002. The experience gathered in the previous Inter-Celtic Colloquiums was inherited by the **Fourth Inter-Celtic Colloquium**, to be held in the city of Guimarães, Portugal, located in the Northern region of Minho, as former Inter-Celtic Colloquium organisers are members of the Fourth Inter-Celtic Organising Committee.

PAPERS RECEIVED

More than 30 papers have been submitted to the Organising Committee for peer review by the Scientific Committee. Accepted papers will be scheduled for presentation in six Thematic Sessions: T1 - Climate variability; T2 - Water Quality; T3 - Groundwater; T4 - Hydrology; T5 - Modelling; T6 - Management & EIA. Hereinafter is a draft list of the papers submitted by mid April 2005 (tentatively scheduled for oral presentation at the Colloquium, as may be seen in the draft programme attached in page 8):

1. Cycleau - Integrating research and decision-making for whole river basin management (LOVEDAY E.T. JENKIN, and DAVE C. WATKINS - UK).
2. The eutrophication in the river Vouga basin – impacts on the quality of water for public supply (FIGUEIREDO FAUSTO OLIVEIRA - Portugal).
3. An assessment of runoff trends in the Celtic regions of North West Europe (J.HANNAFORD and T.J. MARSH, - UK).
4. Precipitation trends in Mainland Portugal in the period 1941-2000 (M. ISABEL P. DE LIMA, ANA C.P. MARQUES, JOÃO L.M.P. DE LIMA, and M. FÁTIMA E.S. COELHO – Portugal).
5. Applying MIKESHE to define the influence of rewetting on floods in Flanders (MARK HENRY RUBARENZYA, PATRICK WILLEMS, JEAN BERLAMONT, and JAN FEYEN – Belgium).
6. Low flow distributions in Celtic Countries (L.BROGAN AND C.CUNNANE – Ireland).
7. Mechanisms of flooding in the Mawddach catchment (GRAHAM HALL and ROGER CRATCHLEY - UK).
8. The environmental impact and risks associated with changes in fluvial morphodynamic processes (J. S. ANTUNES DO CARMO - Portugal).
9. Influencia de una plantación de eucaliptus globulus de siete años sobre los caudales de estiaje de una pequeña cuenca (B. SOTO, M.A. BREA, R. PEREZ, and F. DÍAZ-FIERROS– Spain).
10. Isotopes et ressources en eau, exemple du bassin synclinal d'Essaouira (Maroc Occidental) (M.BAHIR, M.O. SILVA, J. MENDONÇA, P. CARREIRA, GALEGO FERNANDES, M. BENBIBA, and M. ELMERAJI - Maroc/ Portugal)
11. Water balance and observed flows in the Anllóns river basin (NW Spain) (RIAL RIVAS, M.ERMITAS, ÁLVAREZ ENJO MANUEL ALÍ, and DÍAZ-FIERROS VIQUEIRA, FRANCISCO - Spain).

COLLOQUIUM SECRETARIAT ADDRESSES

1. Lisbon: Mrs. Ana Estevão, Associação Portuguesa dos Recursos Hídricos, Avenida do Brasil, 101, P- 1700-066 LISBOA, Portugal
e-mail: aprh@aprh.pt, Tel. 351 218443428, Fax: 351 218443017
2. Guimarães: Mrs. Anabela Sampaio (or Prof. José Pinho), Departamento de Engenharia Civil, Universidade do Minho, Campus de Azurém, P-4800-058 GUIMARÃES, Portugal
e-mail: a.sampaio@civil.uminho.pt, Tel.: +351253604720, Fax: +351253604721.

LODGING FACILITIES

For hotel reservation and availability of other selected lodging facilities for the Colloquium, please contact the Organising Committee in Universidade do Minho at Guimarães (c/o Mrs Anabela Sampaio a.sampaio@civil.uminho.pt or Prof. José Pinho jpinho@civil.uminho.pt). The Organising Committee will reserve your hotel according to your arrival and departure dates if required.

For travelling you may want to see:

<http://www.flights-to-portugal.gb.net/> Flights to Portugal - Travel Guide - Cheap flight to Portugal: *Finding a cheap flight to Portugal is becoming increasingly easy these days as an upsurge in the number of budget flight operators flying to Faro, Lisbon and Porto increases. This is particularly true of online flight operators, so make sure you shop around online and at the travel agents for cheap flights to Portugal. You can also keep an eye out for good deals by looking in the newspapers, especially the Sunday papers and magazines, as they sometimes advertise cheap flights in their travel sections or you may be able to collect vouchers to gain a discount, for example.*

REGISTRATION FORM (please fill in and send a copy to the Secretariats 1 or 2)

Personal Details (Family name, First name) _____/_____

Profession or Title / Institution _____/
Address _____

E-mail _____; Tel. _____; Fax _____

Member of APRH / APESB /IAHS – (yes / no); If yes Number _____

Student (with card or certificate – (yes/no); Institution: _____

I am author or co-author of a paper submitted to *The Fourth Inter-Celtic Colloquium* (yes/no).

I am author or co-author of a poster submitted to *The Fourth Inter-Celtic Colloquium* (yes/no).

I have been invited as a Round Table Speaker by the Organising Committee (yes/no).

I have been invited as a Key-Lecturer by the Organising Committee (yes/no).

Payment will be made in cash, or by Check endorsed to *Associação Portuguesa dos Recursos Hídricos - The Fourth Inter-Celtic Colloquium*, or preferably, by Bankers Draft in Euro made payable to *Associação Portuguesa dos Recursos Hídricos - The Fourth Inter-Celtic Colloquium*.

Date _____/_____/_____; Signature _____

DOCUMENTATION

A CD-ROM with the Colloquium papers will be distributed to all attendants. The publication of an IAHS red book is under consideration.

ORGANISING COMMITTEE

J.P. Lobo-Ferreira (Chairman, LNEC, Portugal, jferreira@lnec.pt)

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Rafaela Matos (LNEC, Portugal)

Maria A. Santos (LNEC, Portugal)

Luís Veiga da Cunha (Universidade Nova de Lisboa, Portugal)

José Novais Barbosa (Universidade do Porto, Portugal)

Maria da Conceição Cunha (Universidade de Coimbra, Portugal)

Adri Verwey (Delft Hydraulics, The Netherlands)

J. Dooge (University College Dublin, Ireland)

J. McCulloch (European Geophysical Society-HESS)

Z.W. Kundzewicz (Editor HSJ, Polish Academy of Sciences)

P. Mérot (INRA, Rennes, Brittany, France)

A. Werritty (University of Dundee, Scotland, UK).

REGISTRATION FEES

| | |
|--|-------|
| Early registration and Members of APRH, APESB and IAHS (up May 31, 2005) | € 200 |
| Late registration for other participants (after May 31, 2005) | € 225 |
| Student registration (before May 31, 2005) | € 75 |
| Student registration (after May 31, 2005) | € 100 |

Registration fee includes attendance at all technical sessions, conference dinner and reception, tea/coffee breaks, and a CD-ROM with the Colloquium papers.

- Aluminum contents in drinking water from public water supplies of Galicia (Northwest Spain) (DAVID A. RUBINOS, MANUEL ARIAS, CARLOS AYMERICH, and FRANCISCO DÍAZ-FIERROS- Spain).
- Hydrogeology of hard-rocks in the Portuguese Iberian Massif: Porto urban area and Serra da Estrela mountain region (M^a. JOSÉ AFONSO, J.E. MARQUES, J.M. MARQUES, P. CARREIRA, J.M. CARVALHO, M. MARQUES DA SILVA, JAVIER SAMPER, B. PISANI, F.S. BORGES, F.T. ROCHA, P. E. FONSECA, A. GOMES, M^a. ARAÚJO, G. TELES VIEIRA, CARLA MORA, JOSÉ TEIXEIRA, P.G. ALMEIDA, J. A. GONÇALVES, and H.I. CHAMINÉ - Portugal).
- An indicator system for surface water quality in river basins (RITA OLIVEIRA, and MANUELA LIMA – Portugal).
- Application of RIAM to the environmental impact assessment of hydroelectric installations (PAULO S.F. DE ARAÚJO, EDUARDO F.S.C. MOURA, and NAIM HAIE - Portugal).
- Hydrological modelling and salt water intrusion in a Northern Portugal estuary (JOSÉ L. PINHO – Portugal).
- Origins and dynamics of suspended sediment in small agricultural catchments (J. LEFRANCOIS, C. GRIMALDI, C. GASCUEL-ODOUX, and N. GILLIET – France).
- Implications of climate change for river regimes in Wales: a comparison of scenarios and models (J.A.A. JONES – UK).
- Marnage et biodiversité en étang peu profond: estimation et relations (Limousin, France) (DELPHINE BRUNAUD – France).
- Constructions cyanobactériennes calcaires dans les rivières de Haute-Normandie: perspectives de gestion (FREDERIC PITOIS, ALAIN JIGOREL, and PAUL FERLIN – France).
- Stockage du phosphore dans les sédiments d'un réservoir eutrophe (Gouet, Bretagne, France) (ALAIN JIGOREL, ANNICK BOUEDO, and REMY NICOLAS – France).
- On the impact of changes in the weather on the surface temperature of Windermere (UK) and Lough Feeagh (Ireland) (GLEN GEORGE, DIANE HEWITT, ELEANOR JENNINGS, NORMAN ALLOTT, and PHILIP MCGINNITY - UK/Ireland).
- Models to predict the impact of the climate changes on aquifer recharge (MANUEL MENDES OLIVEIRA, MARIA EMÍLIA NOVO, and J. P. LOBO-FERREIRA - Portugal).
- On Wellhead protection assessment methods and a case-study application on Montemor-o-Novo, Portugal (MARIA JOÃO MOINANTE and J. P. LOBO-FERREIRA – Portugal).
- Assessing aquifer vulnerability to sea-water intrusion using GALDIT method: Part 1 – Application to the Portuguese Aquifer of Monte Gordo (J. P. LOBO-FERREIRA, A. G. CHACHADI, and CATARINA DIAMANTINO, M. J. - Portugal/India).
- Assessing aquifer vulnerability to sea-water intrusion using GALDIT method: Part 2 – GALDIT Indicators Description (A. G. CHACHADI and J. P. LOBO-FERREIRA - India/Portugal).
- Impact of road runoff in soil and groundwater. Synthesis of Portuguese and other European case-studies (TERESA E. LEITÃO - Portugal).
- Methodologies for pollution risk assessment of water resources (CATARINA DIAMANTINO, M. J. HENRIQUES, MANUEL M. OLIVEIRA, M. J. MOINANTE, and J.P. LOBO-FERREIRA - Portugal).

29. New method for groundwater plume detection under uncertainty (LUÍS MIGUEL NUNES, MARIA DA CONCEIÇÃO CUNHA, LUÍS RIBEIRO, and JOÃO AZEVEDO - Portugal).
30. Application of artificial neural networks for river flow simulation and forecasting on three French catchments (M. GOSWAMI, and K.M. O'CONNOR– Ireland).
31. Using hydrologic models and Geographic Information Systems for water resources evaluation: GIS-VISUAL-BALAN and its application to Atlantic basins in Spain (Valiñas) and Portugal (Serra da Estrela) (JAVIER SAMPER, MIGUEL ANGEL GARCÍA VERA, BRUNO PISANI, ALBERTO VARELA, JOSÉ ANGEL LOSADA, DIEGO ALVARES, and JORGE ESPINHA MARQUES - Spain / Portugal).
32. The use of multivariate statistical analysis to evaluate spatial and temporal water contamination in Germunde coal mine (Portugal) (RENATA SANTOS, LUÍS RIBEIRO, AMÉLIA CARVALHO DILL – Portugal).
33. Quality Assurance for Hydrometric Network Data as a Basis for Integrated River Basin Management (FRANK SCHLAEGER, and MICHAEL NATSCHKE – Germany).

KEY-LECTURES

Three KEY-LECTURES have been programmed:

1. Key-Lecture on “Echanges intersystèmes: du bassin versant aux eaux côtières littorale”, financial support, by JEAN CLAUDE LEFEUVRE Professeur au Muséum d’Histoire Naturelle de Paris, Président de l’Institut Français de la Biodiversité (France).
2. Key-Lecture on “Numerical Flood Simulation”, by ADRI VERWEY, Delft Hydraulics (The Netherlands).
3. Key-Lecture on “Flooding and climate change”, by ALAN WERRITTY, Prof. at Dundee University, Scotland (UK).

ROUND TABLES

Two Round Tables have been programmed, the first one on “Climate variability assessment and relevance in Celtic countries” and the on “How to achieve quantity and quality goals of the Water Framework Directive in Celtic countries”.

Round Table 1 on “Climate variability assessment and relevance” - Invited speakers:

1. “Impacts of Climate Change on Water Resources: a Case-Study on Portugal”, by L. VEIGA DA CUNHA (Professor at Universidade Nova de Lisboa, Portugal – Co-authors of the paper: RODRIGO PROENÇA DE OLIVEIRA, JOÃO NASCIMENTO, and LUIS RIBEIRO).
2. “Sustainable development and climate change”, by VIRIATO S. MARQUES (Faculdade de Letras da Universidade de Lisboa, Portugal).
3. “Regional Climate Change Impact and Selected Response Studies in the UK, by IAN HOLMAN (Cranfield University at Silsoe, UK).

Round Table 2 on “How to achieve quantity and quality goals of the Water Framework Directive” - Invited speakers:

1. “Progresses in the implementation of the WFD in EU Member-States”, by A. G. HENRIQUES (LNEC, Portugal).
2. “Potential implications of the WFD for catchments management in the UK” by ALUN ATTWOOD (Policy Advisor Wales for the Water Framework Directive, UK).
3. “Water safety plans: methodologies for risk assessment and risk management in drinking water systems”, by JOSÉ VIEIRA (Universidade do Minho, Portugal).

EXCURSIONS AND SOCIAL EVENTS

At the moment the following events are envisaged:

- A half-day technical excursion to visit sites of hydrological and historical interest, in Northern Portugal (*e.g.* Citânia de Briteiros, see figure below).
- Ice-Breaking Party at *Palácio dos Duques de Bragança*, (see figure below).
- A conference farewell dinner (venue to be confirmed, eventually at Pousada de Santa Marinha, Guimarães).
- A one-day post-symposium excursion to the Gerês National Park (Suajo village and Alto Lima reservoir) and to the Minho river valley, including wine tasting at the Alvarinho Wine House on the banks of the Minho river in Melgaço and/or Monção (see figure below).



Citânia de Briteiros, Minho - a ruined Celtic hill-top settlement, and river Minho at Monção



Palácio dos Duques de Bragança, Castelo de Guimarães, Universidade do Minho at Guimarães