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PANTA RHEI

this issue
Fellowships
for
RESEARCH TRAINING

Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the ERASMUS, COMETT and TEMPUS Programmes of the European Community (EC)

A QUARTERLY BULLETIN

N° 12 - JUNE - 1992

GLOSSARY

ACMOBI

ACademic MOBility information system (TECHWARE).

CALWARE

Computer-Aided-Learning in hydraulics, hydrology and WATER RESOURCES technology, strand Cb project (TECHWARE).

CEC

Commission of the European Community.

COMETT

COMMunity action for Education and Training for Technology, the European Community programme on cooperation between universities and industry regarding training in the field of technology (TFHR).

COST -CEEC

Cooperation in Science and Technology with Central and Eastern European Countries, programme of DGXII.

DG

Directorate-General, administrative unit of CEC (there are XXIII DGs).

EC

European Community (member states : B, D, DK, E, F, GR, I, IRL, L, NL, P, UK).

EP

European Parliament (EC).

EFTA

European Free Trade Association (member states : A, CH, FL, IS, N, S, SF).

ERASMUS

EuROpean Action Scheme for the Mobility of University Students (TFHR).

ETC

European Training Courses of TECHWARE.

FORCE

FORmation Continue en Europe - Continuing Vocational Training in Europe (TFHR).

HCM

Human Capital and Mobility, framework programme of DG XII.

ICP

Interuniversity Cooperation Programme (ERASMUS).

IP

Intensive Programme (ERASMUS).

IRDAC

Industrial Research and Development Advisory Committee of CEC.

JEP

Joint European Project (TEMPUS).

NGAA

National Grant Awarding Authority providing the grants for student mobility (ERASMUS).

PEP

Personnel Exchange Programme of TECHWARE.

RTB

Regional TECHWARE Bureau.

SAST

Strategic Analysis for Science and Technology (DG XII).

SME

Small- and medium sized enterprise.

SPES

Student and young graduate Placements for training in European industry of the water environment Sector (TECHWARE).

STRANDS (COMETT)

A : Action establishing UETPs.

B : Action for transnational exchanges (students, young graduates, personnel).

C : Joint Training Actions.

D : Complementary measures.

TECHWARE

TECHnology for WATER RESOURCES, sectoral UETP (COMETT, Strand A) and International Non-Profit-Making Association, with headquarters in Brussels (B).

TECHWARE- Italia and TECHWARE-UK are Regional TECHWARE Bureaus (RTB).

The symbol of TECHWARE is the **icosahedron**, associated with water in PLATO's philosophy.

TEMPUS

TransEuropean Mobility Scheme for University Studies, the EC-programme for education and training in CEE-countries (eligible : BG, CS, H, PL, RU, YU) (TFHR).

TFHR

Task Force Human Resources, Education, Training and Youth (CEC).

UETP

University Enterprise Training Partnership (COMETT, Strand A).

WEEL

Water Environment European Laboratories, pan-European scientific network of TECHWARE.

Hydrology

The logos of the waters, or the science that deals with the waters of the earth, their occurrence, circulation and distribution, their chemical and physical properties, and their interaction with their environment, including their relations to living beings.

Water management

Planned development, distribution and use of water resources, in accordance with predetermined objectives and with respect to both quantity and quality of the water resources.

Water resources technology

The development and application of (new) technologies to increase and improve the supply both in quantity and quality, interpreted in terms of availability of surface and underground waters.

EDITORIAL

The European dimension of education was reinforced at the Maastricht summit of December 1991 and the TREATY ON EUROPEAN UNION agreed on EC responsibility and action in this field. We publish hereafter the relevant sections of articles 126 and 127.

Around the same period, the Task Force Human Resources, Education and Youth (TFHR) has published and distributed a **Memorandum on Higher Education in the European Community**.

Brussels, November 1991, 46 pp.

(COM (91) 349 final) ISBN 92-77-75834-1.

It is a document designed to stimulate the debate: TFHR will present a synthesis of the debate to the Council at the end of 1992.

It is interesting to note that this Memorandum discusses two topics a.o. presented earlier in this Editorial.

We introduced the HUMAN CAPITAL and MOBILITY programme for the first time in the September 1991 issue (PANTA RHEI No. 9). We wrote . . . "In fact, ERASMUS and COMETT are preparing and reinforcing the human capital and mobility for the next decades".

The Memorandum discusses on p. 8 (items 22 to 26) the "Research Function in Higher Education". The linkage between the quality of teaching and the quality of RTD activities in higher education institutions is stressed. Partnership and networks within and across the boundaries of Member States should be stimulated so that the critical mass for effective research and interdisciplinary developments can be attained. Explicit reference is made to the HUMAN CAPITAL and MOBILITY programme (see elsewhere in this issue). Moreover, every ICP- or UETP-partner will welcome the statement that the Commission is taking steps to inter-relate its research and development programmes and the action programmes such as ERASMUS and COMETT.

The TEMPUS JEP-partners will welcome alike the new action on Cooperation in Science and Technology with Central and Eastern European Countries - also announced in this issue of PANTA RHEI.

On p. 11 (items 35 to 39) of the Memorandum is discussed "Higher Education and External Relations". We refer to our Editorial in PANTA RHEI No. 11 (March 1992). We quote "The new cohesive Europe will need to maintain, strengthen and enhance its commitment in education and training to these countries . . ." (i.e. the ACP-countries, the Arab world, Asia and Latin America). Item 37 reads :

An enhanced role for education and training in the external relations of the community is evolving for a number of reasons :

- education and training, through interactive exchanges at staff and student level and through study abroad schemes, help to cultivate the mutual understanding, respect and knowledge on which successful political and trading relationships can be based;
- education and training provide an instrument for wider dissemination of knowledge concerning the European Community and its institutions and policies and help therefore in defining its position on the world scene;
- education and training must provide the skills that are necessary for economic development and for political and social progress;
- no nation, or group of nations, has a monopoly of ideas and knowledge and learning from and drawing comparisons with other countries is an

important component of the Community's own development and that of its Member States;

- educational institutions of the Member States of the Community are the custodians of much that is valuable in European culture and civilisation and they can become, therefore, the instruments of cultural exchange on a global basis.

RTD activities with these countries can be funded through the International Scientific Cooperation scheme of DGXII (section G4) : Joint Research Proposals can be submitted and also Post-doctoral Fellowships are available.

Nobody could pretend that the multi-disciplinary water sciences should not be top-priority - next to demography - on the list of RTD-topics in world context. Hence, its up to the European "Water"-Community to request its legitimate share of the available EC-funds. The chances to submit successful proposals may be expected reasonably higher when joining and strengthening existing and active European networks such as TECHWARE.

The Editor

TREATY ON EUROPEAN UNION

Education, vocational training and youth

Article 126

1. The Community shall contribute to the development of quality education to the development of quality education by encouraging cooperation between Member States and, if necessary, by supporting and supplementing their action, while fully respecting the responsibility of the Member States for the content of teaching and the organisation of education systems and their cultural and linguistic diversity.
2. Community action shall be aimed at :
 - developing the European dimension in education, particularly through the teaching and dissemination of the languages of the Member States;
 - encouraging mobility of students and teachers, inter alia by encouraging the academic recognition of diplomas and periods of study;
 - promoting cooperation between educational establishments;
 - encouraging the development of distance education.

Article 127

1. The Community shall implement a vocational training policy which shall support and supplement the action of the Member States for the content and organisation of vocational training.
2. Community action shall aim to :
 - facilitate adaptation to industrial changes, in particular through vocational training and retraining;
 - improve initial and continuing vocational training in order to facilitate vocational integration and reintegration into the labour market;
 - stimulate cooperation on training between educational or training establishments and firms.

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Enclosures : PLEASE POST !

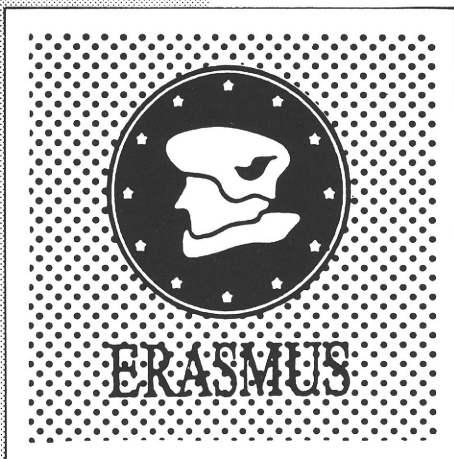
- TECHWARE-SPES Leaflet
- TECHWARE-ETC Leaflet
- TECHWARE-WEEL Research
Training Leaflet
- TRITON leaflet

**ICP : Interuniversity Cooperation Programme
'Hydrology and Water Management'**
Coordinator : Prof. A. Van der Beken (see address Editor)

FÜNF NEUE LÄNDER OF THE FNL FEDERAL REPUBLIC OF GERMANY

The ERASMUS-Bureau announces special grants for study visits to the FNL, available to both academic and administrative staff of universities. The deadline for applications is 1 October 1992. Please contact ERASMUS-Bureau in Brussels.

BIOGRAPHY OF ERASMUS



Léon Halkin, professor emeritus of the University of Liège (B) has written an exhaustive biography of Desiderius ERASMUS Roterodamus, born at Rotterdam in 1469 as an illegitimate child of a priest. It is a highly instructive study about a true European, 500 years ago and a solitary man like all those who are free men.

French original : Erasme parmi nous.

German translation : Erasmus von Rotterdam : eine Biographie. Beuziger, Zürich, 1989. **Dutch translation :** De biografie van Erasmus. Tirion, Baarn, 1991, 416 pp.

ERASMUS Bureau

70, rue Montoyer straat 70
B-1040 Brussels

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fax +32-2-2330150
telex 63528

ICP "Hydrology and Water Management"

The next plenary meeting of all "Hydrology and Water Management" ICP-partners will be held on 31 August and 1 September 1992 in Firenze (I) at the occasion of the Bi-annual Italian Conference of Hydraulics and Hydraulic Constructions

Tentative Programme

Monday 31 August

Palazzo degli Affari, Piazza Adua 1, Firenze

- 10.00 welcome by the host, Prof. G. Federici, head of the Department and chairman of the Organizing Committee "XXIII Convegno di Idraulica e Costruzioni Idrauliche"
- 10.15 Draft-report of the 1991-92 activities
Preparation of the 1992-93 activities
- 12.30 Lunch
- 14.00 Proposals for 1993-94 including requests of new prospective partners.
- 16.30 End and transfer to Palazzo Vecchio, Piazza della Signoria
- 18.00 Opening of the XXIII Convegno "L'Idraulica Italiana nel Confronto Europeo"
- 21.00 Dinner

XXIII CONVEGNO DI IDRAULICA E COSTRUZIONI IDRAULICHE "L'IDRAULICA ITALIANA NEL CONFRONTO EUROPEO"

Tuesday 1 September

Palazzo degli Affari, Piazza Adua 1, Firenze

- 12.30-13.15 Prof. L. Ubertini, ICP-partner "Hydrological Hazards Control"
- 17.00-17.40 Prof. A. Van der Beken, ICP-Coordinator "Hydraulic and hydrologic education and training in European perspective"
- 17.40-18.30 Round Table. Chairman Prof. F. Siccardi, ICP-partner "Research and professional activities at European scale : cooperation or competition ?"

Contact : Prof. Giorgio FEDERICI
Dipartimento di Ingegneria Civile
Università di Firenze
via di S. Marta, 1-50139 Firenze
tel : +39-55-4796432/4796309/4796212
fax : +39-55-404375 / telex : 580681

ERASMUS ICP

"Hydrology and Water Management"

Name :

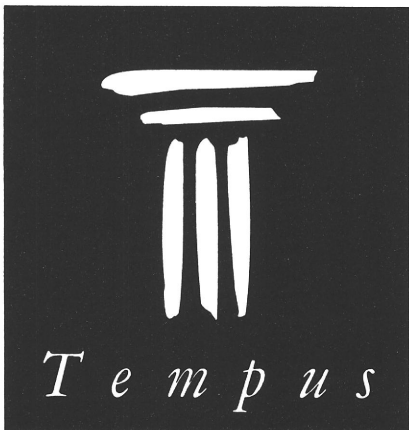
Address :

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requests a copy of the INFORMATION BROCHURE and the POSTER

Date : Signature :

Return to the Editor of PANTA RHEI



NEWS from TEMPUS

JEP : Joint European Project
"Interuniversity Coordinating Forum for East-West Cooperation
in the field of Environment, Water and Agricultural Soils (EWA-Ring)"

NEWS from EWA-Ring

Environment-Water-Agricultural Soils
 "TEMPUS Joint European Project"
 number 2150-91

"At the beginning of December 1991, Ms. Ewa Wietsma-Lacka started to work as Assistant Coordinator of EWA-Ring JEP No. 2150-91 coordinated by Prof. Dr. -Ing. J.J. Bogardi.

Ms. Wietsma is a native of Poland. She studied biology at the University of Gdansk and at the Wageningen Agricultural university where she graduated in 1984.

Contact : Ir. E. Wietsma-Lacka, Department of Hydrology, Soil Physics and Hydraulics.
 Nieuwe Kanaal 11, NL-6709 PA Wageningen
 Tel : +31-8370-8429 Fax : +31-8370-84885

Short Intensive Course

1 - 6 June 1992

'Decision Making for Environmentally Oriented Water Resources Management'

Agricultural University Prague in C.S.F.R.

Monday 1 June 1992

- Session I : Introduction to Multi-objective/Multi-Criteria Decision Support
- Session II : Selected Techniques of Multi-Objective/Multi-Criteria Decision Support

Tuesday 2-6-1992

- Session II continued
- Session III : Deterministic simulation Techniques in Environmentally Oriented Water Resources management

Wednesday 3-6-1992

- Hands-on exercise and demonstration of software to lectures presented on Tuesday and individual discussion with lecturers.
- Cultural program.

Thursday 4-6-1992

- Session IV : Experience with Decision support Techniques in Environmentally Oriented Water Resources management
- Session V : Issues and Tendencies

Friday 5-6-1992

- Session VI : International Water Resources Development and Its environmental Implication: a Case Study.
- Session VII : Colloquium : Students are subdivided among the lecturers still present. These groups hold an oral exam type discussion, evaluated by the respective lecturer.
- Closing of the course.

Saturday 6-6-1992

- Excursion

NATIONAL TEMPUS OFFICES in the ELIGIBLE COUNTRIES

ALBANIA

Mr. Jovan Thereska, Director
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 Republic Office for International Scientific and Technical Cooperation
 Department of International Organisations
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 U Luzického semináře 13/90, CS-11800 Prague 1
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SLOVENIA

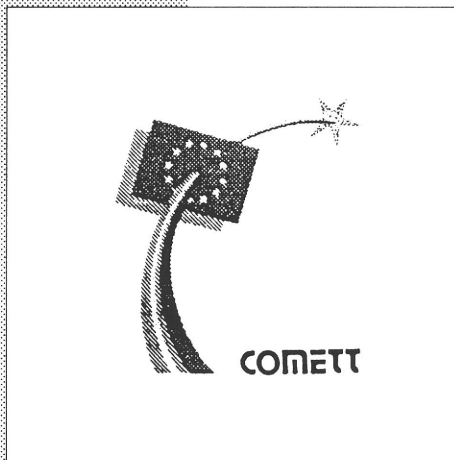
Mr. Albin Babic, Assistant Minister
 Ministry of Science and Technology
 TEMPUS Office
 Titova 32, (SLO)-61000 Ljubljana, Slovenia
 Tel : (0038) 61-111107 Fax : (0038) 61-124140

NEWS from COMETT

UETP : University Enterprise Training Partnership
 TECHWARE - TECHNOLOGY for WATER RESOURCES
 Coordinator : A. Van der Beken c/o CIBE-BIWM
 Wolstraat 70, B-1000 Brussel

TECHWARE two years later

The original application to COMETT, dated 31 March 1990, with the proposal to establish the UETP TECHWARE, listed some 89 partners from 14 countries. On July 6, 1990 TECHWARE was legally founded by 35 founding-members from 11 European countries, all present in Brussels.



Today TECHWARE counts more than 130 members and is growing steadily.

The overall balance between universities (code U) and enterprises (code E) and other organizations (O) is well respected. Code letter A represents other UETPs which are preferential partners of TECHWARE. In several cases the host-organization of the UETP (often an enterprise) is itself a member of TECHWARE. The table below shows,

quite understandable, how Regional TECHWARE Bureaux are linked to the number of members in the given country.

TECHWARE expects a further growth in several countries, especially in those where its activities are not yet fully known.

TYPE OF ORGANIZATION

COUNTRY	E	O	A	U	TOTALS
Belgium	15	7	1	12	35
Bulgaria				1	1
Czechoslovakia	1				1
Denmark	2			3	5
Finland		1	1		2
France	4	1	1	5	11
Germany				1	1
Greece		1		1	2
Hungary	1			1	2
The Netherlands	3	1		6	10
Italy	11	2		9	22 with RTB
Poland				3	3
Portugal	1				1
Romania				1	1
Russia				1	1
Spain	2		1	3	6
Sweden				1	1
United Kingdom	8	3		13	24 with RTB
USA		1			1
Yugoslavia				3	3
TOTALS : 20	48	17	4	64	133

All TECHWARE members are kindly invited to the 4th meeting of the

GENERAL ASSEMBLY

Meetings of Executive Committee, Board of Management and General Assembly

Venue : LNEC
 Laboratorio Nacional
 de Engenharia civil
 Avenida do Brasil 101
 P-1799 Lisboa Codex Portugal
 Tel +351-1-8482131
 fax +351-1-8473845

Programme

Friday, 12th June 1992

09h00
 TECHWARE Executive Committee
 15h00

Opening Session

Welcome Address by Mr. Arantes e Oliveira, Director LNEC • Opening Address by ir. J. Dirickx, President TECHWARE • Address by Mr. Antonio Taveira, Portuguese Secretary of State of Natural Resources : "Trends in Water Resources in Portugal" • COMETT beyond '93 by Representative of COMETT Task force • Follow-up of SAST (Strategic Analysis in Science & Technology) : Project N° 6 "Research and Technological Development for the Supply and Use of Freshwater Resources" by Mr. B. Schmitz, Director of SAST • Human Capital and Mobility (HCM) by Representative of DG XII

16h15 : Break
 16h30-18h00

TECHWARE General Assembly

Saturday, 13th June 1992

09h00
 TECHWARE Board of Management
 10h45 : Break

11h15 : Technical Session

• A summary Appraisal of the Surface and Groundwater Resources of Portugal, by Dr. J.P. Lobo-Ferreira, Senior Research Officer LNEC, and head of the Groundwater Research Group, and Eng. João Bau, Principal Research Officer LNEC.

• The WB/UNDP International Programme for Technology Research in Irrigation and Drainage (IPTRID Project), by Dr. Sanmuganathan, head of the Overseas Development unit of HR Wallingford and IPTRID Manager.

14h00
 TECHWARE Executive Committee
 15h00

Technical visit to the Water museum.
 Departure from LNEC by bus.

18h00
 Cocktail offered by EPAL, the Portuguese Water Distribution Company. Return to LNEC by bus.

News from TECHWARE-UK

Regional TECHWARE Bureau

Elsa Santos from EVORA university, Portugal has been working at Wallingford to help establish a plan for the development of the Regional TECHWARE Bureau (RTB) in the United Kingdom. Since December 1991 the numbers of UK members have increased by 25% largely through greater promotion of activities.

TECHWARE-UK member meetings are held every six months. The last was held in January 1992. TECHWARE is keen to establish a network of similar bureaux throughout Europe. This was emphasised by the Board of Management at their last meeting in February which was also held at Wallingford.

TECHWARE -UK are developing with Brussels a communications method using information technology and supported by TECHWARE -Italia. Dr. Kurshid Ahmad (University of Surrey) is liaising with a Brussels task force to develop relevant methods for communication and including electronic mail.

The RTB-UK is implementing the ACMOBI Database for student exchanges in order to offer a better service to members. The RTB-UK is supporting an application for the HUMAN CAPITAL and MOBILITY programme and encouraging a common strategy for members.

The RTB-UK is supporting an application for establishing a system of computer bulletin boards for disseminating information on education and training.

UK members are involved in numerous student exchange programmes and on training courses to be held in Lisbon, Ghent, Barcelona, Genoa and Delft. The next meeting of TECHWARE-UK will be at Wallingford on the 19th June 1992 at Wallingford. Interested individuals should contact :

Elsa Santos, TECHWARE-UK

c/o HR Wallingford
Howbery park, Wallingford
Oxfordshire OX108 BA, UK
Tel : +44-491-35381 Fax : +44-491-26703



TECHWARE Membership Dues 1992

Decision of the General Assembly
of Genova, 20 April 1991

- Individual Consultant 200 ECU
- University, Research Institute (Lab or Dept.), School/Non-commercial 220 ECU
- Enterprise/Undertaking/Authority (less than 200 employees) COMETT Size codes S1-S2-S3 300 ECU
- Professional and Scientific Association, UETP'S, Federation of Enterprises 400 ECU
- Enterprise/Undertaking Authority (more than 200 employees) COMETT Size codes S4-S5-S6-S7 500 ECU

**FOR ALL
FURTHER
INFORMATION,
please contact :**

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Bank Accountnumber :
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B-1000 Brussels
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For easy and quick money transfer,
use code :
61189 SWIFT CGAK BE BB

• **TECHWARE-Italia**
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Wallingford
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Great Britain
tel +44-491-3538
fax +44-491-32233



AZIENDA MUNICIPALIZZATA GAS E ACQUA

services

- water services
- environmental monitoring
- energy services and natural gas distribution

advanced technology training



STAGE

SVILUPPO TECNOLOGIE
ACQUA GAS EUROPA

training centre

TECHWARE EUROPEAN TRAINING COURSES 1991 - 1992

A summary of all courses is now available and can be ordered free of charge from the Secretariat. Please fill in and return :

I request the summary of all course descriptions, free of charge.

Name :

Address :

Return to the Editor of PANTA RHEI

FORTHCOMING TECHWARE ACTIVITIES

EUROPEAN TRAINING COURSES

SP 2.1

BASICS OF GROUNDWATER MODELLING FOR MANAGEMENT

Wallingford - United Kingdom
22-26 June, 1992

Course description

The fundamentals of groundwater modelling will be discussed. This will be followed by a step-by-step presentation of the theory and application of analytical and numerical groundwater models featuring:

- Equations and numerical methods
- The conceptual model and grid design
- Boundaries
- Sources and sinks
- Transient simulations
- Model execution and the calibration process
- Advective transport of contaminants
- Parameter estimation

Who should attend

The course is intended for professionals working in the fields of Hydrology, hydrogeology or civil, agricultural and environmental engineering who wish to become acquainted with a range of modelling techniques. Some experience with computer applications is advantageous for the workshops, but not essential.

Contact : Hazel Dandridge
TECHWARE U.K., c/o HR Wallingford
Howbery Park, Wallingford
Oxfordshire OX108BA, UK
Tel : +44-491-35381 Fax : +44-491-26703

SP 1

MODERNE TECNOLOGIE INFORMATICHE PER IL CONTROLLO DEI FENOMENI IDROLOGICI

Seriate (Bergamo) - Italy
23-24 June, 1992

Contact : ISMES S.p.a.
Segreteria Istruzione Permanente
Viale Giulio Cesare, 29
I-24100 Bergamo, Italy
Tel : +39-35-307242 Fax : +39-35-211191

SP 5.2

RADARS AND OTHER RAINFALL MEASUREMENT TECHNIQUES IN URBAN DRAINAGE

Belgrade - Yugoslavia
29 June-3 July, 1992

Course Outline

- Introduction : what is Rainfall ?
- Rainfall measurement Devices
- Data Processing for Hydrological Use
- Case Studies
- Field Trip

Target Group

Students, engineers dealing with urban drainage and related problems, flood protection engineers, RTC operators, meteorologists with inclination to cooperation with water specialists.

Contact

IRTCUD
Institute of Hydraulic Engineering
Faculty of Civil Engineering, P.O. Box 895
11000 Belgrade, Yugoslavia
Tel : +38-11-329190 Fax : +38-11-320237

SP 6.1

COMPUTER APPLICATIONS IN IRRIGATION PLANNING AND DESIGN

Leuven - Belgium
7-12 September, 1992

Contact

Mrs. Greta Camps
Center for Irrigation Engineering
Katholieke Universiteit Leuven
Vital Decosterstraat 102,
B-3000 LEUVEN, Belgium
Tel : +32-16-231381 Fax : +32-16-230607
Telex : 27210 KULAND

SP 4

WATER SUPPLY SYSTEMS State of the Art and Future Trends

Valencia - Spain
October 19-23, 1992

Monday, October 19

- 10.00 General Overview of the different features and problems in a water distribution systems. The case of Spain.
- 12.00 Demand forecasting in water distribution systems.
- 16.00 Hydraulic analysis of water distribution systems.

- 18.00 Modern conception of a water distribution system. Policies for the improvement of networks with shortcomings.

Tuesday, October 20

- 10.00 Optimum design of water distribution networks.
- 12.00 Mathematical modelling of water distribution systems in service.
- 16.00 New trends in distribution research : dynamic calculation.
- 18.00 Transient behaviour of water supply networks.

Wednesday, October 21

- 10.00 Use and selection of control devices in water distribution networks.
- 12.00 Round table : Analysis and design of water distribution networks.
- 16.00 Automation levels in water supply systems. Measurement and control variables.
- 18.00 Optima control of water distribution networks. Technical survey and practical applications.

Thursday, October 22

- 10.00 Use and benefits of water distribution models.
- 12.00 GIS technology for water distribution management.
- 16.00 Network monitoring and the algorithmic location of leaks under steady and unsteady conditions.
- 18.00 Rehabilitation of potable water mains.

Friday, October 23

- 09.00 Ratios to be considered in the management of a water distribution system
- 11.00 The cost of water. Different policies for determining the price of water.
- 12.30 Round Table : Management of water distribution networks.

Contact

Universidad Internacional Menéndez Pelayo
Student office : UIMP de Valencia
Palau de Pineda
Plaça del Carmen 4
E-46003 Valencia, Spain
Tel : +34-6-3869802 or 3869804
Fax : +34-6-3869823

SP 3.3

WASTE WATER TREATMENT PROCESSES

Genova - Italy
26-28 October, 1992

SP 1.2

FLOOD HAZARDS IN MEDITERRANEAN COUNTRIES

Lisboa - Portugal
November 1992

NEW !

RESEARCH TRAINING

see also
leaflet
enclosed

COST-CEEC

COOPERATION IN SCIENCE AND
TECHNOLOGY WITH CENTRAL AND
EASTERN EUROPEAN COUNTRIES

**Deadline for proposals :
7 AUGUST 1992**

If you want to cooperate through TECHWARE, please send a request but not later than 15 July 1992, giving all details according to the following items :

Eligible countries : EC and Albania, Bulgaria, Czechoslovakia, Estonia, Hungary, Latvia, Lithuania, Poland and Romania.

Five Activities

- Scientific and technical mobility involving nationals of the European Community and those of the Central and Eastern European countries (research fellowships).
- The development of pan-European scientific networks and the organisation of and participation in conferences, workshops and seminars.
- Joint research projects in priority areas, between organisations and enterprises, both public and private, of the European Community and the countries of Central and Eastern Europe. the areas include the quality of life (environmental protection, health protection, social sciences and social problems) and the industrial technologies (information and communication technologies, materials and production, agro-industry and food).
- Support for the participation of organisations and enterprises of Central and Eastern European countries in projects of those specific Community programmes for research and technological development which allow such participation on a project by project basis.
- Support for the participation of organisations and enterprises established in Central and Eastern European countries in COST actions.

Further Information

The description of the priority areas, the conditions required for participation in the activities concerned, as well as application forms (included in the information package), can be obtained at the following address :

For COST-CEEC :

Commission of the European Communities
Scientific and Technical Cooperation with Central and Eastern European Countries
75 Rue Montoyer, B - 1040 Brussels
Fax +32-2-2363308

For HCM :

CEC-DGXII-H-1
75 Rue Montoyerstraat, B-1040 Brussels
Fax +32-2-2363307

HCM

HUMAN CAPITAL and MOBILITY

is a specific Research and Technological Development subprogramme of the Third Framework Programme (1990-1994) of the Commission of the European Communities - Directorate General XII.

HCM comprises four areas :

- Area 1 : fellowships for training of individual researchers
Area 2 : networks among research teams and laboratories for scientific and technical cooperation.
Area 3 : access to large-scale facilities
Area 4 : R&D Euro-conferences.

WHY ?

The European water community should take up its genuine share of the HUMAN CAPITAL and MOBILITY and COST-CEEC programmes. Water encompasses many interactive disciplines and their scientific and technological integrated development is vital for the environment as well as for the economic, social and health standards of Europe and the world.

TECHWARE's aim is to promote and foster the participation of its members in pan-European programmes. Therefore, TECHWARE has established a Task Force "WEEL-Water Environment European Laboratories" in order to prepare applications for the HUMAN CAPITAL and MOBILITY and COST-CEEC programmes. The TECHWARE network of more than 130 members in 20 European countries has a strong potential to act through WEEL in these programmes because WEEL can easily respond to the objectives of a scientific network :

- pooling of scientific and technical expertise for the benefit of all participants
- encouragement of the interaction of different disciplines
- the combining of various technologies and the application of techniques from one field to another.

TECHWARE counts among its membership several research teams of scientific excellence. Originality and appropriateness of research themes are based upon the selected participation of the members in many European research programmes such as COST, EPOCH, STEP, MAST, International Scientific Cooperation, a.o. Moreover, the well-regarded expert-reports submitted by TECHWARE within the framework of Project No. 6 "Research and Technological Development for the Supply and Use of Freshwater Resources" of SAST (Strategic Analysis in Science and Technology - another programme of DGXII) offer a sound basis for a long-term strategy for WEEL.

HOW ?

The deadline of the first call for proposals for HCM is around 26 JUNE 1992 and for COST-CEEC 7 August 1992, but the calls will be repeated on a continuous basis.

INDIVIDUAL RESEARCHERS

- at the postdoctoral level or holders of a postgraduate degree and a minimum of two years of research activity (or young researchers at doctoral level in certain disciplines)
- nationals of an eligible country
- active within a scientific or technical theme or project belonging to the selected topics of WEEL
- interested to join a WEEL-team or -laboratory in another eligible country for a period between 6 and 24 months (the fellowship awarded by HCM will be between 3000 and 4000 ECU per month, depending a.o. on the country)

should fill in the LETTER OF INTENT (see enclosure WEEL).

- add a full curriculum vitae, including a list of reprints and publications
- return the Letter of Intent with annexes to the Task force WEEL-TECHWARE, c/o CIBE/BIWM
Wolstraat 70, B-1000 Brussels / Fax : +32-2-5026735.

RESEARCH TEAMS or LABORATORIES

Public or private - of recognized or promising quality in EC- or EFTA-countries, wishing to join TECHWARE and its WEEL-network, should send to the Task Force WEEL-TECHWARE a request with a full description of their facilities, staff and research activities, including the specific scientific or technical themes or projects, especially those within EC-research programmes, and the list of partners in other countries. They should also add the names of researchers who would like to benefit from a training fellowship and their potential to act as host-laboratory. Research teams or laboratories in peripheral or less-favoured regions of the EC or in priority areas of CEEC are given special consideration.

ON YOUR DESK

World Education News & Reviews (WENR)

World Education Services, Inc., P.O. Box 745 Old Chelsea Station, New York, N.Y. 10113-0745, USA publishes reprints of feature articles in past issues of its journal WENR. Each reprint costs US\$ 8 and has a length of 4 to 12 pages. Some titles :

- Evaluating International Credentials : Problems of Transfer Credit : A definitive article on this subject, 8 pgs.

Profiles of Higher Education in Selected countries of French-Speaking Africa : Benin, Burkina Faso, Cameroun, Central African Republic, Chad, Congo, Côte d'Ivoire, Gabon, Guinea, Madagascar, Mali, Mauritania, Niger, Senegal and Togo, 12 pgs. of detailed outlines.

- Outlines of Eastern European and USSR Educational Systems : Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, Yugoslavia and the former U.S.S.R. 11 pgs. of the latest information available.

- The Educational System of Brazil : an Update of Current Reforms : You'll understand why few students earn even a secondary education in this fifth largest country in the world. 11 pgs.

- Reforms in Australian Higher Education : The rationale behind the Australian government's move to consolidate universities and colleges of advanced education, including a list of merged institutions.

- The Educational System of Finland : the country which offers no bachelor's degree at university level. 8 pgs.

- The Educational System of Greece : Why so many Greek university students are forced to study abroad. 8 pgs.

- Spanish Education Today : How entry into the European Community has affected the educational system. 9 pgs.

- Perspectives on Education in Mexico : Including an institutional profile of the National University of Mexico. 10 pgs.

Educational Credential Evaluators, Inc. P.O. Box 17499 Milwaukee WI 53217-0499 USA publishes a

"Guide to evaluating educational credentials from China"

Price : US\$ 15.

"A history of the University in Europe. Volume I. Universities in the Middle Ages"

Cambridge University Press 1992, ISBN 0521 361052

First volume of a series of four, sponsored by the Conference of Rectors of the European Universities (CRE). Some 50- co-authors present

MISCELLANEA

a synthesis and comparison of all aspects of the universities throughout the centuries. It is a major contribution to our common history.

WATER MANAGEMENT EUROPE 1992

An annual review of the European water and wastewater industry

Editor : Paul Garrett

Published by Sterling Publications International Ltd. A subsidiary of Sterling Publishing Group PLC, Garfield House, 86-88 Edgware road, London W2 2YW, Tel : +44-71-2580066.

ISSN 0963-9403

Price : £55.00.

Mathematics by CD-ROM

Mathematics volume 1 is part of the Renaissance Project, a collaboration between Apple Computer UK Ltd and a group of major educational institutions to explore the use of multimedia in education.

The disc is available for £52.50 from Xploratorium, Anglia Polytechnic, Sawyers Hall Lane, Brentwood CM15 9BT, UK.

INFO

EUROPEAN WATER POLLUTION CONTROL

In 1991 the European Water Pollution control Association e.V. (EWPCA) founded its own journal : European Water Pollution Control (EWPC). The EWPCA is the association of national societies (such as the IWEM, ATV, AGHTM, etc.) concerned with the control of water pollution and the management of water in Europe.

Appearing six times a year, the new journal is interdisciplinary, has a pan-European perspective and aims to give readers the information they need to keep up-to-date on water pollution and water management problems. It fills the gap between existing national and worldwide journals. Water is a unique resource and pollution or management problems often affect more than one European country.

Articles are peer-reviewed to ensure high scientific quality and direct relevance to readers, both practitioners and researchers. Readers of PANTA RHEI are invited to submit News and Papers for publication in EWPC. The Editor-in-Chief is drs. J.A. van de Kraats, P.O. Box 17, NL-8200 AA Lelystad, the Netherlands.

Subscription details are available from the publisher : Elsevier Science Publishers B.V., P.O. Box 211, 1000 AE Amsterdam, the Netherlands. Members of the national societies can subscribe at a reduced rate.

Database of drainage research

Open for access to anyone after 7 May 1992. Paul Davies can advise users on which modem and software to use so that they can benefit from the bulletin board. The database can be directly accessed on 0246-220658.

Mr. Paul Davies international contact number is +44-246-216249. through this number, the users may give information on any papers they might want to include on the database and on covering drainage research or further information which it involves.

Contact : Mr. Paul Davies
Chesterfield Borough Council
Town Hall Chesterfield, Chesterfield S40 1LP
Tel : +44-246-472172 Fax : +44-246-221085

Community Financial Aid for Environmental Protection

Projects involving environmental improvements can qualify for assistance from a range of Community programmes. These funds, which provide opportunities for new jobs, include :

- **ACE** - Action by the Community relating to the environment

- **The Structural funds** - The Community's Structural Funds (European Regional Development Funds, European Social Funds, European Agricultural Guarantee and Guidance Fund - all play a role in environmental protection.

- **ENVIREG** - A new initiative within the Regional Fund, provides financial assistance for productive investment, and for environmentally beneficial investment in infrastructures directly linked to economic development.

- **IMP** - Integrated Mediterranean Programmes. Actions aimed at improving the socio-economic stability of certain Mediterranean regions. Includes protection of the environment.

- **MEDSPA** - Strategy and planning for the protection of the environment in the Mediterranean basin

- **EIB** - European Investment Bank. Provides financial support for a wide range of projects, including loans to environmental protection schemes.

- **NCI** - New Community Instrument. Provides loans for investment in SME, including those relating to the environment, new technologies, and the rational use of energy.

ECHO, European Commission Host Organization

ECHO is an experimental and pioneering host of the Directorate General Telecommunications, information Industries and Innovation (DG XIII). Besides TED on tenders, it offers IM-guide, an inventory of European databases and the CORDIS research programmes.

Contact : ECHO
PO Box 2373, L-1023 Luxembourg
Tel : +352-488041 Fax : +352-488040

JUNE 1992

- 8 Lyngby (DK)
TECHWARE ETC SP5.2
Radars and rainfall in urban hydrology : engineering aspects
- 13 2-5/6
Espoo (SF)
Helsinki University of Technology
5th World Conference on Continuing Engineering Education
- 13 6-7/6
St.Petersburg (Russia)
5th World Conference on Continuing Engineering Education
- 19 8/6-3/7
Reston, Virginia (USA)
International training course
Techniques of Hydrological Investigations for International Participants
- 2 9/6
Wallingford (UK)
HR Wallingford
Seminar
Applications, developments and trends in 3D coastal waters modelling
- 20 10/6-5/8
Moscow (Russia)
Moscow State University
International Higher Hydrological Course on the Scientific Basis of Research and utilization of Groundwater Resources
Techniques of Hydrological Investigations for International Participants
- 2 11/6
Wallingford (UK)
HR Wallingford
Seminar
Catchment management
- 8 12-13/6
Lisboa (P)
4th Meeting General Assembly TECHWARE
- 27 14-16/6
Nova Scotia (Canada)
4th International conference on computer assisted learning
- 1 15-18/6
London (UK)
Seminar
Industrial Water Pollution Control Technology
- 12 16-20/6
Paris (F)
The Ninth International Conference on Technology and Education

- 2 18/6
Glasgow (UK)
HR Wallingford
Seminar
Bridge hydraulics
- 2 22-26/6
Wallingford (UK)
TECHWARE ETC SP2.1
Basics of mathematical Groundwater modelling for management
- 5 23/6
Delft (NL)
IHE Delft
Short course - 6 weeks
Anaerobic Waste Water Treatment
- 5 23/6
Delft (NL)
IHE Delft
Short course - 8 weeks
Water Quality Management for Decisionmakers
- 5 23/6
Delft (NL)
IHE Delft
Short course - 8 weeks
Low-Cost Water supply and Sanitation
- 5 23/6
Delft (NL)
IHE Delft
Short course - 8 weeks
Applied Ecology
- 4 23-24/6
Bergamo (I)
TECHWARE ETC 1
Moderne Tecnologie Informatiche per il Controllo dei Fenomeni Idrologici
- 5 24-28/6
Delft (NL)
Intensive International Course on River Basin Administration in Europe
- 4 25-26/6
Bergamo (I)
Workshop on Advances in Distributed Hydrology
- 3 29/6-3/7
Belgrade (YU)
TECHWARE ETC SP5.2
Radars and other rainfall measurement techniques in urban drainage
- 34 29/6-24/7
Southampton (UK)
Institute of irrigation Studies
Short course
Development and the Environment

JULY 1992

- 2 15-17/7
Wallingford (UK)
HR Wallingford
River Engineering
- 33 19/7-8/8
Dundee (UK)
Dundee Summer School
Remote sensing and global climate change
- 6 21-23/7
Valencia (E)
Hydrosoft '92 - Tutorials
• Knowledge Based Systems in Water Resources
• Optimization of Hydraulic Networks
• Dambreak Analysis
• Groundwater Management
- 32 22-24/7
London (UK)
College of Art
Computer-based course on practical techniques of interactive media design

AUGUST 1992

- 7 10/8-12/9
Tel-Aviv (ISRAEL)
International Postgraduate Course in Hydrometeorology
- 21 17/8-27/11
Wageningen (NL)
International Agricultural Centre
International Postgraduate Course on Land Drainage
- 22 30/8-3/9
Dublin (IRL)
Dublin City University
8th World Conference on Co-operative Education
- 22 31/8-1/9
Firenze (I)
Meeting
ERASMUS ICP-91-B-1138 Hydrology and Water Management

Note : In view of PANTA RHEI's objectives, this calendar includes only educational and training or related activities in the field of water and ERASMUS-ICP, TEMPUS-JEP, COMETT and HCM or COST-CEEC meetings.

continued on page 12

FRACTALS

Le Torrent et la Rivière

Avec grand bruit et grand fracas
Un torrent tomboit des montagnes:
Tout fuyoit devant lui; l'horreur suivoit ses pas;
Il faisoit trambler les campagnes.
Nul voyageur n'osoit passer
Une barrière si puissante;
Un seul vit des voleurs; et se sentant presser,
Il mit entre eux et lui cette onde menaçante.
Ce n'étoit que menace et bruit sans profondeur:
Notre homme enfin n'eut que la peur.
Ce succès lui donnant courage,
Et les mêmes voleurs le poursuivant toujours,
Il rencontra sur son passage
Une rivière dont le cours,
Image d'un sommeil doux, paisible, et tranquille,
Lui fit croire d'abord ce trajet fort facile:
Point de bords escarpés, un sable pur et net.
Il entre; et son cheval le met
A couvert des voleurs, mais non de l'onde noire:
Tous deux au Styx allèrent boire;
Tous deux, à nager malheureux,
Allèrent traverser, au séjour ténébreux,
Bien d'autres fleuves que les nôtres.
Les gens sans bruit sont dangereux:
Il n'en est pas ainsi des autres.

Ref : Livre huitième - Fable 23 de La fontaine
Production Prosveta, Beograd, 1990 p. 300.

STUDENT OPPORTUNITIES

EUROPEAN FOUNDATION FOR
QUALITY MANAGEMENT

EUROPEAN QUALITY AWARD
FOR THESES ON TOTAL
QUALITY MANAGEMENT

1992

CALL FOR APPLICATIONS

PRIZES
FOR WINNING ENTRIES
Doctoral Thesis : ECU 5,000
Master Thesis : ECU 3,000

The Application must reach E.F.Q.M. not
later than 1 August 1992

For further informations please contact the
European Foundation for Quality Man-
agement, at the following address :

European Foundation for Quality manage-
ment
The European Quality Award secretariat
rue de Planèur 6
B-1130 Brussels, Belgium
Tel : +32-2-7272803 Fax : +32-2-7272806

JOB VACANCIES

I I M I
INTERNATIONAL
IRRIGATION
MANAGEMENT INSTITUTE

Colombo, Sri Lanka
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IIMI is recruiting for a Director for Finance
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excellent communication skills and a solid
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personnel management. Qualifications must
include a degree in Business Administra-
tion, preferably at an advanced level and
a minimum of 10 years experience. Women
are particularly encouraged to apply.

If you are qualified, please send your
resume and the names and addresses of
three references to the International Re-
cruitment Consultant (Ref. No. 502 ML),
IIMI, P.O. Box 2075, Colombo, Sri Lanka.

To advertise your vacancies
contact the Editor : Fax +32-2-641 3022

NEXT COPY DEADLINE : 1 August 1992

Training at HR Wallingford

HR Wallingford is a high technology research,
consultancy and training organisation specialising in
civil engineering hydraulics and management of the
water environment.

Training activities include transfer of key technologies
and skills through:

- study programmes
- fellowships and research placements
- courses, seminars and conferences
- publications
- software and equipment sales and training

To find out more, contact:

John Millns
Head of Training and Technology,
HR Wallingford Ltd, Wallingford,
Oxfordshire OX10 8BA. UK
Tel. + 44 491 35381 Fax. + 44 491 26703



HR Wallingford

International Water Supply Association
Association Internationale des Distributions d'Eau

UNITING THE WORLD OF WATER
LE MONDE DE L'EAU S'UNIT

I W S A

A I D E



The "MAARTEN SCHALEKAMP AWARD"
is to be awarded in Budapest, October 1993
Le "PRIX MAARTEN SCHALEKAMP"
sera attribué à Budapest en octobre 1993

includes two prizes, intended to motivate young engineers and
scientists, both for scientific research and innovation ori-
ented work in water supply, one to be awarded to entrants
employed full-time in practice of water supply, the other to a
full-time student in a water-related field

comprend deux prix, visant à motiver de jeunes ingénieurs et
chercheurs, pour des travaux de recherche scientifique ou
d'innovation dans le domaine de la distribution d'eau; l'un sera
remis à un candidat engagé à plein temps dans un domaine lié à
la distribution d'eau, l'autre à un étudiant à plein temps engagé
dans des études se rapportant à la distribution d'eau.

Information :

International Water Supply Association (IWSA)
Association Internationale des Distributions d'Eau (AIDE)
1 Queen Anne's Gate
London, SW1H 9BT, Great Britain

ADVERTISING RATES

(in ECU)

Advertisements must be informative and related to the objectives of PANTA RHEI or the activities of partners. They are subject to cancellation at the discretion of the Editor.

Free of charge

- Student opportunities
- Courses, workshops, meetings (in calendar format)

At cost per line in a column in ECU
classified

- positions wanted 4
- positions available 6
- courses, workshops, meetings, conferences 8
- services, supply 10

At cost per page or part of it : display advertising

- full page 1000
- half page 500
- quarto page 250
- octavo page 125

Special placements or enclosures : give details and ask for rates

COPY DATE FOR THE NEXT ISSUE IS 1 August

PANTA RHEI is published on DIN A4 format

- TECHWARE members are entitled to receive a 50% discount or two insertions for the price of one.
- Invoices are expressed in ECU and must be paid with all banking costs charged to the payer.

Please note

You may receive more than one copy of this information bulletin due to :

- your membership in one of the partner-organizations
- your partnership in one of the water related

ERASMUS, COMETT, TEMPUS, HCM or COST-CEEC projects.

Please pass extra bulletins on to your colleagues who may be interested in PANTA RHEI.

- Please add my name to your mailing list
- Change address as shown
- Please publish the enclosed training informations (calendar format, free of charge) in the next issue
- Please publish the enclosed information as classified and send me the invoice
- Please send me an Advertising Agreement

Name :

Affiliation :

Address :

.....

.....

.....

Tel : Fax :

Telex : E-mail :

PANTA RHEI

A quarterly information bulletin edited on behalf of the partners in the field of hydrology, water management and water resources technology. It is published with the financial support of the European Community within the framework of the ERASMUS, COMETT and TEMPUS programmes and distributed free of charge. The present distribution is 4,250 copies. Issues are published in September, December, March and June.

OBJECTIVES OF PANTA RHEI

An efficient and continuous way of communication among all ERASMUS, COMETT, TEMPUS, HCM and COST-CEEC partners, both active and prospective, and among students and training participants with interest in water related fields.

Service to the

- ICP-Interuniversity Cooperation Programme "Hydrology and Water Management"
- JEP-Joint European Project : "Interuniversity Coordinating Forum for East-West Cooperation in the field of Environment, Water and Agricultural Soils (EWA-Ring)"
- UETP-University Enterprise Training Partnership : TECHWARE - TECHnology for WATER Resources.
- TECHWARE-WEEL pan European scientific network "Water Environment European Laboratories"

Dissemination of activities or proposals of partners, in particular,

- transnational exchanges of students, young graduates and staff
- joint development of full curricula or specific training tools
- crash or intensive courses
- analysis of training needs

Information about other water related training activities.

Promotion of a European dimension in the field of water-related education and training.

"panta rhei"

all things are in constant flux.

It is an axioma of Heraclitus (c. 540 - c. 480 BC), Greek philosopher of Ephesus, quoted by Plato. Heraclitus is also known for illustrating the persistence of unity through change by the analogy of the river : "Upon those who step into the same river different and ever different waters flow down".

EDITOR A. Van der Beken

IUPHY - Interuniversity Postgraduate Programme in Hydrology
Laboratory of Hydrology,
Faculty of Applied Sciences
Vrije Universiteit Brussel
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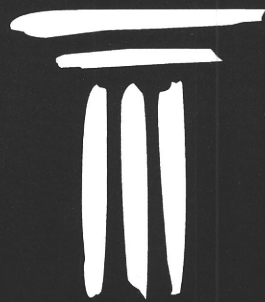
F. Siccardi
Genova, Italy



ERASMUS



COMETT



Tempus

Information Bulletin for 'Education in Hydrology and Water Management' and 'Training for Water Resources Technology' within the framework of the ERASMUS, COMETT and TEMPUS Programmes of the European Community (EC)

Informatie Bulletin voor 'Onderwijs in hydrologie en waterbeheer' en 'Opleiding voor technologie van de watervoorraden'

Bulletin d'Information pour l' 'Education en hydrologie et la gestion de l'eau' et la 'Formation pour la technologie des ressources en eau'

Informationsblad om 'Uddannelse og efteruddannelse i tekniske emner knyttet til vand'

Boletín Informativo sobre la 'Educación en el campo de la hidrología y la gestión del agua' y 'Entrenamiento en tecnología de los recursos hídricos'

Bollettino di Informazione per 'Educazione in idrologia e gestione delle acque' e 'Formazione alla tecnologia delle risorse idriche'

Biuletyn Informacyjny dot. 'Nauczania w zakresie hydrologii i gospodarki wodnej' oraz 'Szkolenia w zakresie technologii wykorzystania i ochrony zasobów wodnych'