Education & Professio Section (EPD)

The latest meeting of the IAHR Section on Education and Professional Development (EPD) was held together with the meeting of the Engineering Graduate School Environment Water (EGW). It took place on Sunday, July 1st in Venice, Italy, during the 32nd IAHR Congress and was chaired by Prof. Aronne Armanini.

n Development

One main activity of EPD during the last two years was the initiation of the Seminar on 'Issues on Education' which was held during the Congress. Within EGW, the number of courses decreased in the last two years due to general changes in further education. About five successful courses are running on an annual or bi-annual basis. They have in common that they aim at higher education, that they are of high quality and that they foresee national or international lecturer teams. One aim of the EPD activities in the next two years will consist of an extension of the EGW program by other 'high quality courses'. This will be carried out by linking EGW to other international further education programs. In the last months, new links have been established to further education courses of TU Delft and the National University of Singapore.

The concept of master classes was discussed. In a master class which generally is held directly before a conference a limited number of PhD students have the opportunity to discuss their work with an expert or to participate in an expert course for about one day. The feedback of such master classes was very good, for example during the Fluvial Hydraulics Conferences. The feedback was not very good during the Venice Congress. One reason for this was believed to be the comparative late announcement of the master classes. The supervisors have the strongest responsibility of informing and sending the PhD students to these special classes. One should also have in mind, that PhD students should not be overloaded during a conference (master class + conference). Master classes for the Vancouver Congress should be announced very early to the LOC.

Prof. Hotchkiss from the Local Organizing Committee (LOC) of the 33rd edition IAHR Congress which will take place 2009 in Vancouver, Canada introduced the current stage of planning concerning education which is at the moment under Topic E (Advances in Hydroinformatics for Integrated Watershed and Coast Management), 5. Education and Training (using cyber platforms). In order to strengthen the role of education within IAHR and during the Vancouver Congress, EPD has suggested three Technical Sessions / Seminars (Technical Session E5: New Technologies in Education, Seminar: International Student Chapters' Meeting, Seminar: Current and Future Directions in Education) to the LOC in the meantime. To more closely integrate students, young scientists and the student chapters in the Vancouver Congress, EPD will look for some support and will contact the LOC.

Prof. Armanini resigned as the chairman after a four-year period. The committee thanked him for his very ambitious work and all his activities which shaped EPD during the last years. Prof. Hinkelmann was elected as the the new Chairman during the meeting. **[see column]** Subsequently, Prof. Michele Mossa has accepted the post of Secretary.

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For the profile of the new EPD Secretary, Prof. Michele Mossa see page 11.

Education on an international level will strongly gain importance in the next years to face and solve the water-related problems of tomorrow and EPD provides a framework for these purposes. If you are interested in EPD activities or if you want to contribute, you are always welcome. Please do not hesitate to contact R. Hinkelmann by email (reinhard.hinkel-mann@wahyd.tu-berlin.de) or visit the web page: www.wahyd.tu-berlin.de/~EPD.

INTRODUCING...

Prof. Reinhard Hinkelmann, the new Chairman of Education and Professional Development Section

Reinhard Hinkelmann studied Civil Engineering at the University of Hannover and continued his studies with a doctoral thesis about paral-lelization of free-surface flow and transport models in 1997. He was a senior engineer between 1997 and 2000 at the Institute of Computer Applications in Civil Engineering, Technical University of Braunschweig and between 2000 and 2004 at the Institute of Hydraulic Engineering, University of Stuttgart. He attained a habilitation with a thesis on 'Efficient Numerical Methods and Information Processing Techniques in Environment Water' in 2003 at the Faculty of Civil and Environmental Engineering, University of Stuttgart. Since March 2004, he is the Head of the Department of Water Resources Management and Modeling of Hydrosystems at the Institute of Civil Engineering, Technische Universität, Berlin.

Since 2001, Prof. Hinkelmann is Secretary of the Engineering Graduate School Environment Water (EGW). In 2005, he became Secretary and in 2007, Chairman of the Section on Education and Professional Development (EPD). With different scientific colleagues, he is director of the EGW course 'Modeling of Hydro-systems'. His special interests are modeling of subsurface (groundwater, water-gas flow) and free-surface flows and transport processes, their interactions as well as High Performance Computing and Hydroinformatics. He has written about 90 publications (technical reports, text books, conference proceedings, journals).
The ideas and plans for the next two years in EPD are introduced in the report on the joint EPD/EGW meeting in Venice.

Achievements

Over the years, HYDRALAB has achieved a growing coordination of the hydraulic infrastructure activities in Europe, but more in particular the following achievements can be claimed.

Strategy Paper

In April 2004 a strategy paper was published in the Journal of Hydraulic Research and announced in this Newsletter (JHR, Vol. 42, No. 4, pp. 341–356 and Newsletter 1, Vol 21).
The paper dealt with the future role of experimental methods in European hydraulic research, calling for a balanced use of all research tools available. (http://www.hydralab.eu/participant_area/project_docs/strategypaper-April04-2.pdf).

Inventory of facilities

In 2000 we started to make an European wide inventory of hydraulic laboratory facilities, initially with 136 facilities, now containing 422 facilities from 107 institutes. This inventory was made available to the hydraulics community through the IAHR internet site. (http://www.hydralab.eu/N_facilities.asp) at that time, and now at http://www.hydralab.eu/N_facilities.asp

Photo 1 - Large wave flumes

Photo 2 - Research to combat severe coastal erosion for which large scale facilities are needed (example from the Netherlands)

Photo 3 - Cold water formed around Antarctica fills the world's deep oceans

Joint Research Activities

In 2000 the first Joint Research Activity, HYDRIV was started in the HYDRALAB Framework. HYDRIV focused on improving both the quality and efficiency of PIV measurement capabilities for HYDRALAB partners and other large scale hydraulic facilities in Europe. (http://www.hydriv.org/)

Presently two Joint Research Activities, CoMIBBS and SANDS are being executed until 2010. The aim of CoMIBBS is to improve the service provided by hydraulic laboratories by developing techniques and good practice guidelines for composite modelling, which is the integrated and balanced use of physical and numerical models. (http://www.hydralab.eu/CoMIBBS/)

The specific objectives of the SANDS project are to improve the scaling and analysis procedures for mobile bed testing, to achieve more "repeatable" and compatible tests (with known error bounds), and to develop new protocols for the design and interpretation of mobile bed test results. (http://www.hydralab.eu/SANDS/)

Common User Selection procedure

A very important keystone of the unified HYDRALAB approach is the common User Selection Procedure to which the Infrastructures participating in HYDRALAB's Transnational Access activities have agreed. A User Selection Panel (USP), a majority of the membership selected from a list of experts not related to the particular facility, review the proposals for Transnational Access. Thus, we achieve an optimal, co-ordinated, access for the various Infrastructures and User Groups.

Integrated Transnational Access projects
The heart of the infrastructure programme is of course the Transnational Access part. Over the years, the HYDRALAB partners provided access to more than 700 researchers from over 20 different countries.

Some Highlights

For Transnational Access we like to highlight two projects that were recently performed. The first project was laboratory observation of plume entrainment in the presence of submarine canyons and ridges, executed in one of the two Coriolis Turntables (Grenoble and Trondheim) available within HYDRALAB, by researchers of Göteborg University.

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INTRODUCING...

New Secretary of the Section on Education and Professional Development

In 1992 **Michele Mossa** graduated cum laude in Civil Engineering (Hydraulics Section) at Bari Technical University, Italy, defending his thesis on "Velocity laws and flow resistance in conduits with non-circular sections".
In 1996 he completed his PhD with a thesis on "Non-buoyant jets in still and wave environment" with the final examination at the Politecnico di Milano.
In 1997 he was awarded a two years postdoctoral fellowship for Hydraulics research at the Department of Water Engineering, Bari Technical University.
In 1999 he was researcher of Hydraulics at the Taranto Engineering Faculty of Bari Technical University. Becoming in 2001 Associate professor of Hydraulics, teaching Hydraulic-related subjects for degree courses in Environmental and for Territory Engineering at the Taranto Engineering Faculty of Bari Technical University.
In 2006 he was awarded a full Professorship of Hydraulics at the Technical University of Bari, Italy.
In 2005 he founded the IAHR Media Library (www.iahrmedialibrary.net), the IAHR web resource for the storage and dissemination of photographic, animation and video material relating to hydraulics, hydrology and water resources.

Since 2005 Prof. Michele Mossa has been member of the Fluid Mechanics Committee of IAHR.
Since 2007 he has been the person in charge of the Coastal and Maritime Hydraulics of National Consortium of Italian Universities for the Sea Sciences (www.conisma.it)

The main topics of his research are relevant with the Environmental and Maritime Hydraulics, examining the mechanisms of waves, sea currents, local erosion phenomena, buoyant and non-buoyant jets issued in steady or wave environment or in crossflow, also with macroroughness at the bottom (ripples or vegetation), channel flows and their local phenomena, such as hydraulic jumps.

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