



International Conference on Fluvial Hydraulics

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<http://www.gce.ucl.ac.be/riverflow/home.html>

Master Classes in Fluvial Hydraulics : report

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Abstract : This report presents the basic concept of the Master Classes : putting together 5-6 young researchers and 2 senior scientists for a whole day of in-depth discussion on their research works. The practical organisation of the Master Classes held during River Flow 2002 is detailed. The results of the evaluation of these first Master Classes are synthesised. These results were discussed by the Fluvial Hydraulics Section of the IAHR and suggestions and recommendations for the organisation of future Master Classes are given.

Introduction : the concept of Master Classes

The purpose of a Master Class is to put together 5-6 young researchers (typically PhD students) and 2 experts of their research field for a complete day of discussions and exchanges.

Typical organisation of the day is as follows. The first part of the day is dedicated to in-depth presentation of their work by the students. Each presentation take 30 – 45 minutes, thus quite longer than a classical paper presentation in a conference. The rest of the day is then used for commenting and exchanging between the experts and the students, but also between the students themselves.

Such a Master Class is a unique opportunity for the students to address to senior scientists, to meet their peers working on the same topic, and maybe to draw up possible collaborations for the continuation of their PhD work. As the classes are organised in the frame of a conference, having taken part to the Master Class and already met several participants also helps the students to get a better benefit of their participation to the conference that just follows.

The participation to the Master Class provides educational credit.

Practical organisation of the first Master Classes held during River Flow 2002

Five one-day parallel Master Classes were offered to young researchers, in opening of River Flow 2002 – International Conference on Fluvial Hydraulics, on September 03, 2002, in Louvain-la-Neuve, Belgium.

The five topics were chosen according to the topics selected by the IAHR Fluvial Hydraulics Section for its monographs, recently published or in preparation. Indeed, those monographs topics correspond to up-to-date advanced research and a considerable expertise has been accumulated in IAHR, particularly by their authors. These authors were accordingly invited to serve as Masters :

- *Fluvial Processes*
M.S. Yalin, Emeritus Professor, Queen's University, Kingston, Canada
Ana M. A. Ferreira da Silva, Professor, Queen's University, Kingston, Canada
- *Renaturalization of rivers*
Gerrit J. Klaassen, Associate Professor, IHE, Delft, The Netherlands
Tetsuro Tsujimoto, Nagoya University, Japan
- *Modelling of dam-break induced flows*
Alain Pettijean, Professor, ENPC and EDF, Paris, France
Yves Zech, Professor, Université catholique de Louvain, Belgium

- *Torrent and debris flow*
Aronne Armanini, Professor, University of Trento, Italy
- *Flow in compound channels*
Donald W. Knight, Professor, University of Birmingham, United Kingdom
Koji Shiono, Professor, University of Loughborough, United Kingdom

The Master Classes were announced simultaneously in the Conference Bulletin, on the River-List and in the IAHR Newsflash one year before the conference (i.e. in September 2001). The interested young researchers were invited to submit an application, with a resume and a short description of their research work, no later than April 1, 2002 (i.e. 5 months before the conference). 37 applications were received by the conference secretariat for the 5 Classes.

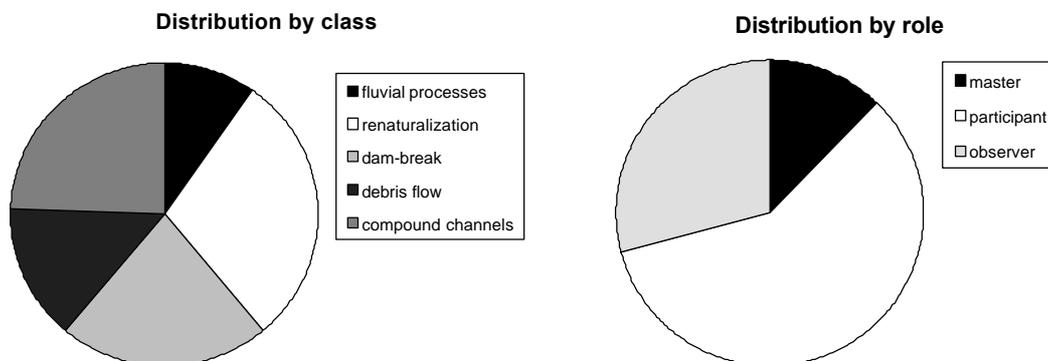
The participating students of each Class were selected by the Masters in mid-June, according to the resume and the short description of their research work. The selection took into account the quality and the innovative aspect of the student work, but also attempted to equilibrate the Class between the different aspects of the topic. 29 participants were selected. 2/3 of these participants were PhD students, the other recently obtained their PhD and are now involved in a post-doctoral research.

Not selected students also had the possibility to attend the Master Class as observers. Around 15 more participants to the conference joined the classes as observers.

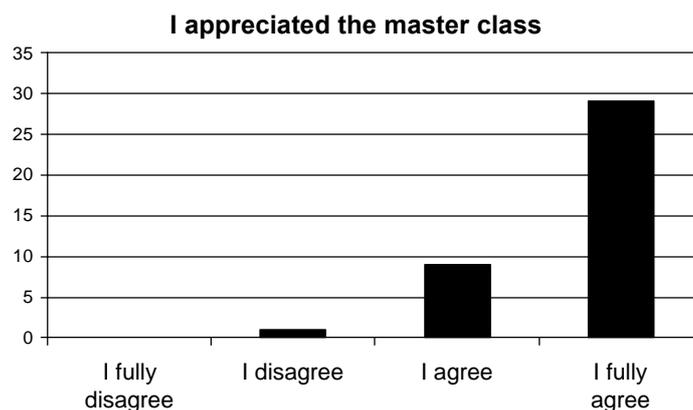
The participation to the Master Classes (incl. lunch) was included in the registration fee of the conference, for the students, but also for the other participants wishing to attend as observer. The Masters were invited by the Organising Committee (free registration, accommodation during the whole conference, participation in the travel cost, no remuneration).

Master Classes evaluation

Participants to the first Master Classes were invited to fill in an evaluation form at the end of the day. 41 filled forms were received, on 50 participants/masters/observers. The classes and the roles are homogeneously represented in the received forms.

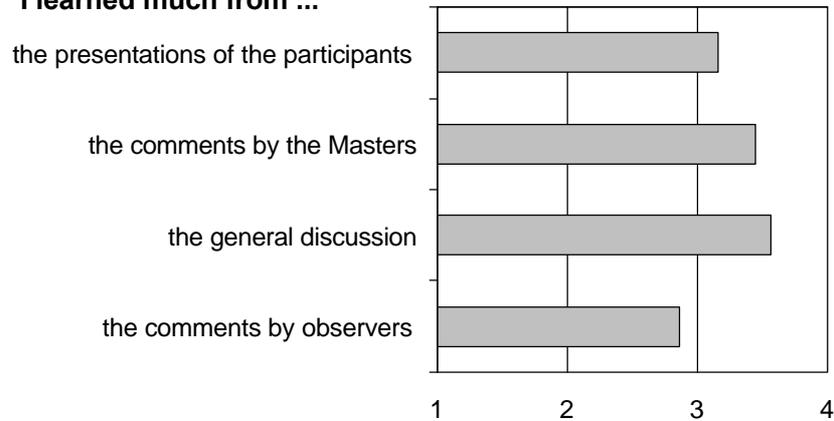


The following graph indicates the general appreciation by the participants. This shows a high level of satisfaction.

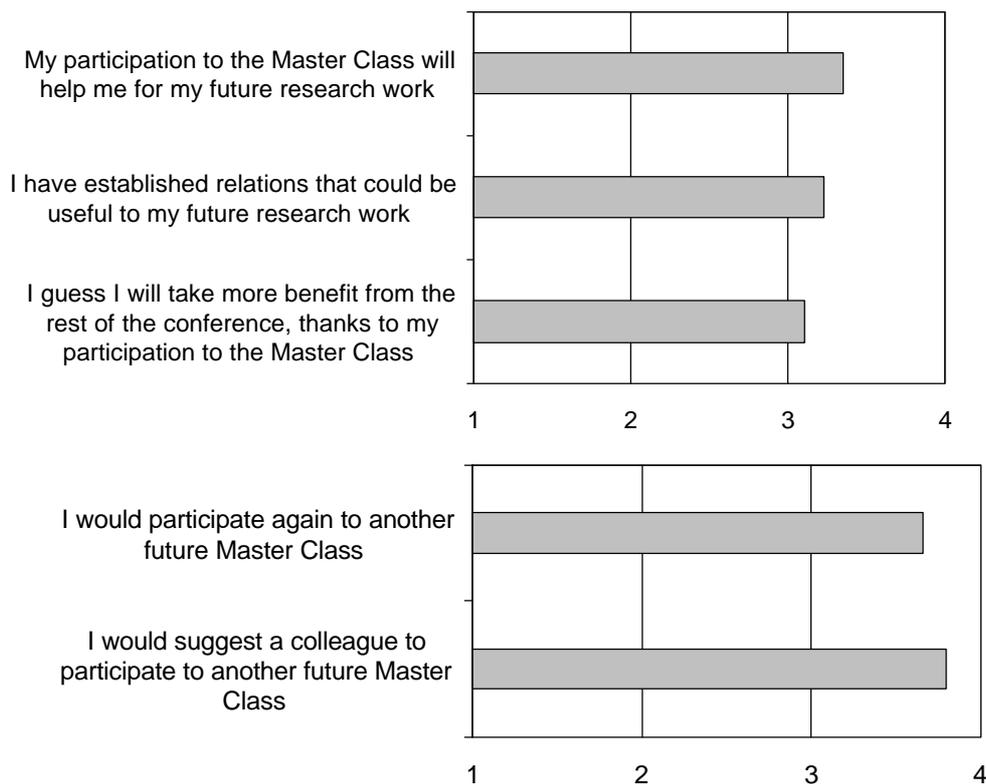


A more detailed analysis shows that the class organisation worked as expected : the main sources of learning are the comments by the Masters and the general discussion, animated by the Master. The presentations by the participants also serve, in a lower extend, to transfer knowledge. Of course, these presentations are also necessary to initiate the discussion. Lastly, the comments by the observers seem not decisive but can enrich the Master Class.

I learned much from ...



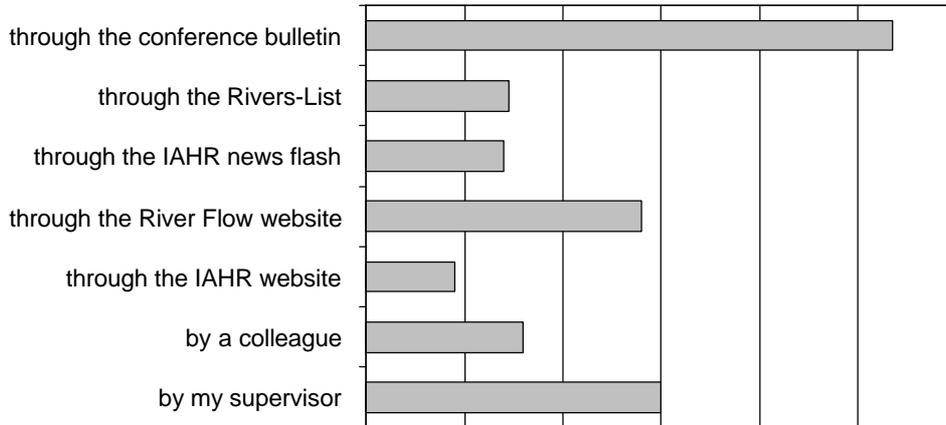
The satisfaction of the young researchers appears in their perception of the benefit of the Master Class for their future research work, and also in their intention to apply again to a future Master Class. Lastly, the participants agree with the idea that their participation will help them to benefit from the rest of the conference. This can be related to the general comment from participants to River Flow 2002 conference who enjoyed a rather young and dynamic participation to the conference, but also the presence of a large number of well-known scientists including those who served as masters.



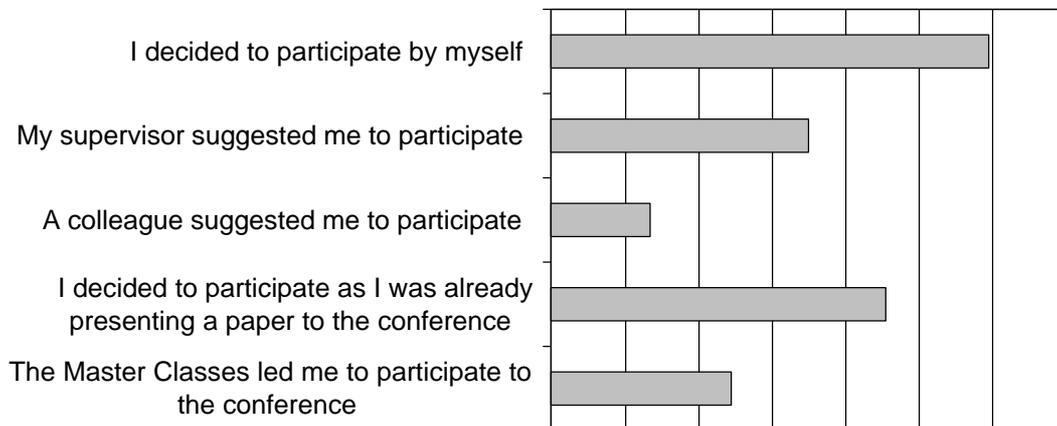
Some practical aspects of the organisation were also evaluated, including the diffusion of the information and the process of decision to participate. Clearly, the first source of information were the conference bulletins and Website. This would indicate that the participants to the Master Classes were initially interested by the conference itself. As show on the next graph, most of them decided to participate to the Class as they already intended to participate to the conference. It should also be noted that 90% of the participants fully agree with the affirmation "the combining of a conference and of a Master Class is ideal". Such a combined organisation enables of course reduction of travel and accommodation costs and helps to get a critical mass of participants.

The second source of information is the supervisor, who is also one of the main factors in the decision to participate. Probably (1) the supervisors received more directly the information (members of IAHR), and (2) they have more experience of conferences and international meetings and have a better perception of the possible return for their students.

I was informed about the Classes

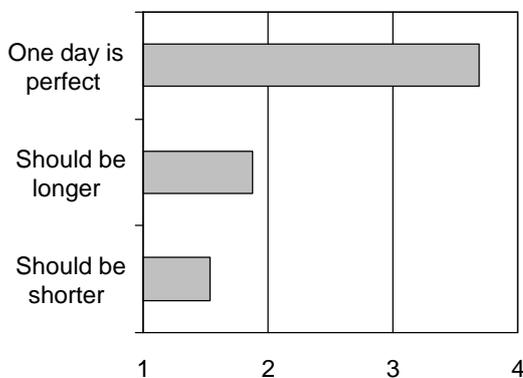


Decision to participate

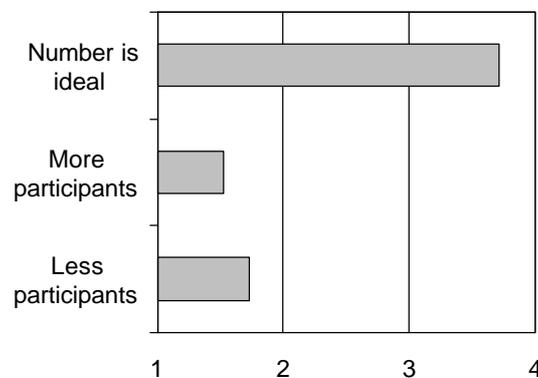


The sizing of the Master Classes seems in general appropriate. Almost all the participants agree on a one day duration. On the other hand, the number of participants (5 or 6) is more discussed. The participants to the Master Class on Renaturalization (6 participants) are the more critical regarding this aspect and suggest to reduce the number of participant to get more time for discussion.

Duration



Number of participants



Lastly, the number of Master (1 or 2) by class was generally appreciated. The lowest satisfaction is obtained for the Debris Flow class which was the only class with only one Master (i.e. a rating of 3.40, thus slightly lower than the average of 3.77 obtained for the five classes).

The equilibrium between number of participants and duration is also discussed in the additional comments written by the participants on their evaluation forms. At least, less time should be devoted to the presentations. Probably 30 minutes could be sufficient. Some participants suggest that the material to be presented could be "pre-checked" by the Masters. It should also be noted that some Masters already collected the presentations or written synthesis before the Classes, but more to prepare the discussion than to suggest possible shortening. Another suggestion is to propose a structure outline for the presentation. Some participants insist on the need to focus the topics covered by each class. The discussion is more effective when all participants are doing research in a similar field.

The other comments generally reflect all the aspects covered above :

- *Nice idea !! Liked it really much.*
- *It was really interesting, the exchange with other people coming from different countries all working in the same field without knowing each other. The Masters were really prepared on our presentations, all the questions were really concerned with our topics.*
- *Thank you very much for this good idea and good opportunity you gave us. It was worth the effort and risk of trying as "first time".*

Lastly, some topics of possible future Master Classes were also suggested : ecohydraulics, environmental hydraulics, holistic management practices, sediment transport, flow resistance, vegetation effects, dike breach and embankment failure.

Suggestions and recommendations

Preliminary results of the above evaluation were discussed on September 4, 2002 during an IAHR Fluvial Hydraulic Section meeting held in the frame of River Flow 2002, with the presence of some of the Masters. The general impression was very positive, from the evaluation analysis, from the comments by the Masters who appreciated very much this experience, and also from feedback of the conference participants.

There was a general agreement on the interest to organise other Master Classes in the future. It was also suggested that such Classes would better fit specialised conference than biannual IAHR congress. Indeed, during the biannual Congresses, the senior scientists are more engaged in section meetings, specialised workshops and many other activities. Moreover, as the participant number is much larger in these congress, one could miss the benefit (1) of the proximity between young and senior scientist; and (2) of the critical mass of researchers working on a very similar topic. These proximity and critical mass were clearly obtained during the River Flow 2002 conference (220 participants), among others thanks to the Master Classes.

Lastly, some more practical points, like the number of participants by class were discussed, according to the above evaluation.

On the basis of this first successful experience, it was also suggested that funding could be easily obtained to support future organisation, including Master invitation but also participation of researchers from developing countries.

It is suggested to organise again Master Classes in future conference, preferably in medium sized speciality conferences. Those Master Classes should ideally be based on the same layout as the one organised during River Flow 2002, with some few improvements :

- duration of one day
- maximum 5 participants in each class
- ideally 2 Masters by class
- well focused topic for each class
- presentations by the participants limited to 30 minutes
- need of an involvement of the Masters before the class (collecting material and preparing discussion)