

Personal Reflections

The hydraulic engineers were at the forefront of science for millennia: for example, the engineers who designed the Roman aqueducts, the Chinese engineers who built the Grand Canal between Guangzhou and Beijing, and the scientists who devised the water gardens of Villa d'Este (Italy), Nishat Bagh (India) and Versailles (France). The last fifty years marked a change of perception in our community with a focus on environmental sustainability particularly in developed countries. I am convinced that the future of Hydraulic Engineering lies in a combination of innovative engineering, some outstanding research scholarship and a higher education of quality. Let us not forget that the technical challenges in hydraulic engineering are enormous and closely linked with the wide range of relevant length scales, from a few millimetres for the wall region of a turbulent boundary layer to over 1,000 km for the length of a major river, the broad range of time scales from less than 0.1 s at the turbulent dissipation scale to about 108 s for reservoir siltation, the huge variability of river flows, the non-linearity of the basic governing equations... and most importantly with the total dependence of Mankind on water. Who would forget that Life on our Planet is impossible without water resources?

Hydraulic engineering is not a virtual discipline but a real-world vocation. Professional experience is critical, including field experience and individual observations, to comprehend the variability of river flows from zero during droughts to gigantic floods, natural fluid instabilities, interactions between water, solid, air and biological life^[1,2]. Virtual resources cannot explain the present political instabilities centred around water systems and freshwater system issues, nor the broad and complex scope of the relevant issues: e.g., water quality, pollution, floods, droughts. Hydraulic engineering is a real-world science for a better society; it is not an electronic toy, a play station or a game box^[2,3]. Simply there is nothing "virtual" about hydraulic engineering!

The forthcoming 34th IAHR Congress is part of a long series of major event, formerly known as IAHR biennial congress, that is regarded as the world's major international scientific event in hydraulic engineering. It is a honour to contribute to a IAHR congress, as well as a service to the community. For example, I remember well my first participation in

1993 in Tokyo; I was very excited to meet so many distinguished scholars and hydraulic engineers. I remember also the first time that I was asked to chair a session in 1999 in Graz: what a thrill but also a privilege to act as chair and moderator of a session regrouping some leading hydraulic speakers! I cannot forget also the Arthur Ippen award lecture that I presented in 2003 in Thessaloniki^[4,5].

The 34th IAHR Congress will take place in Brisbane, Australia, together with the 33rd National Hydrology and Water Resources Symposium and the 10th National Conference on Hydraulics in Water Engineering. The Congress theme "Balance and Uncertainty: Water in a Changing World" reflects upon the central roles of hydraulic engineers, hydrologists and water resource experts in our rapidly changing world. The theme is directly relevant to the Australasian region as well as to the broad international community.

This event will provide an unique opportunity for hydraulic researchers and hydraulic engineers to work together for the betterment of our society. Despite new communication means including emails, Skype, Facebook, Twitter ..., nothing will ever replace the face-to-face meetings. The 34th IAHR Congress is the ultimate opportunity for all of us working in hydraulic engineering to meet the real hydraulicians. What a thrill to meet the true experts! I remember my first international meeting in 1990 in Belgrade where I met Professor Roger Arndt; I read many of his works on cavitation and cavitation damage, and it was enlightening to discuss with him one-on-one. During the last decade, some contributions in hydraulic engineering have involved unethical behaviour, and the trend seemed to have accelerated with the proliferation of publications. Recent journal editorials presented some experience of unscrupulous activities^[6,7,8]. Each researcher and professional should read these because cheating and dishonesty are very serious matters discrediting the entire profession. As a senior expert reviewer, editorial board member and editor, I am regularly engaged in peer-reviews, and I have seen some appalling ethical standards^[2,3]. Cheating has its roots in a relatively small number of unscrupulous people, but these dishonest individuals discredit our entire discipline.

The Organisation of the 34th IAHR Congress is

Written by:

Prof. Hubert Chanson
Chair of the LOC
34th IAHR World Congress
The University of Queensland
Brisbane, Australia
h.chanson@uq.edu.au



committed to a high standing of the congress proceedings papers with a thorough, independent peer-review process combined with high ethical standards. This will ensure some high-quality proceedings papers and presentations for the benefits of the profession and more broadly of the community. The IAHR should endorse such a rigorous peer-review process for all major IAHR events, and it should adopt some stringent ethical standards for all publications including its journals.

Hydraulic engineers must be broad-minded and acknowledge that excellence and scholarship has no linguistic nor geographical boundaries. The 34th IAHR Congress will be another demonstration of the broad-based interests in hydraulics. Engineers and researchers will be able to gain first hand experience in real professional situations, interact with the world-leading experts and comprehend the complex interactions between engineering and non-engineering constraints. The great Albert Einstein himself studied river hydraulics^[9]; our discipline is not for the faint-hearted. In fact I believe that hydraulic engineering is a true challenge for the finest minds of our society!

I am a hydraulician with several years of professional experience and two decades in academia. I am proud to be a hydraulic engineer!

References

- CHANSON, H. (2004). "Enhancing Students' Motivation in the Undergraduate Teaching of Hydraulic Engineering: the Role of Field Works" *Journal of Professional Issues in Engineering Education and Practice*, ASCE, Vol. 130, No. 4, pp. 259-268.
- CHANSON, H. (2008). "Digital Publishing, Ethics and Hydraulic Engineering: the Elusive or "Boring" Bore?" *Proc. 2nd International Junior Researcher and Engineer Workshop on Hydraulic Structures (JREW'08)*, 30 July-1 Aug. 2008, Pisa, Italy, S. PAGLIARA Ed., Edizioni Plus, Università di Pisa. Keynote lecture, pp. 3-13.
- CHANSON, H. (2009). "Digital Publishing, Indexing and Ethics: Implications in Civil and Hydraulic Engineering and Research," *Journal of Professional Issues in Engineering Education and Practice*, ASCE, Vol. 135, No. 4, pp. 117-121 (DOI: 10.1061/(ASCE)1052-3928(2009)135:4(117)).
- CHANSON, H. (2003). "Hydraulic Engineering: Where to? (Quel Futur pour l'Ingénierie Hydraulique?)." *Proc. 30th IAHR Biennial Congress, 13th Ippen Award Lecture*, Thessaloniki, Greece, J. GANOUSSIS and P. PRINOS Ed., Vol. E, pp. 1-16.
- CHANSON, H. (2007). "Hydraulic Engineering in the 21st Century: Where to?" *Journal of Hydraulic Research*, IAHR, Vol. 45, No. 3, pp. 291-301.
- HENZE, M. (2005). "The Ignoble Art of Cheating in Scientific Publications." *Water Research*, Vol. 39, No. 1, January, 2005, pp. 1-2.
- MAVINIC, D. (2006). "The "Art" of Plagiarism." *Canadian Journal of Civil Engineering*, Vol. 33, Iss. 3, pp. iii-vi.
- AIAA Journal (2007). "Publication Ethical Standards: Guidelines and Procedures." *AIAA Journal*, Vol. 45, No. 8, Editorial, No. 8, p. 1794 (DOI: 10.2514/1.32639).
- EINSTEIN, A. (1926). "The Cause of the Formation of Meanders in the Courses of Rivers and of the So-Called Baer's Law." *Die Naturwissenschaften*, Vol. 14 (in German). (Reprinted in English in 1954: "Ideas and Opinions." Bonanza Books, New York, USA, pp. 249-253).

Banaue Rice Terraces: An Engineering Marvel Faces Uncertainties

**Changing the
way we think
about water**

See page 90

**34th IAHR
World
Congress**

See page 92

**IAHR
Awards**

See page 97



Supported by
CEDEX

75
ANNIVERSARY
1935-2010