# Editorial

This is now the commencement of the third year of the *Journal of Hydroinformatics* and the editors are pleased to report that there is a flourishing growth of quality papers being submitted to the journal. At present the editors are making every effort to minimise the backlog of papers and maintain a rapid turn-around in this growing scientific, technological and humano-sociological discipline.

In this issue of the Journal, we again attempt to present the various facets of hydroinformatics. The paper by Sivapragasam *et al.* addresses the important topic of real-time operation studies relating to reservoir operation, flood forecasting, etc. In this study, Singular Spectrum Analysis (SSA) is proposed as a novel pre-processing technique for deterministic chaotic systems, such as rainfall-runoff processes and the resulting input representation is trained with Support Vector Machine technology for forecasting. The proposed technique has been applied to catchment studies in Denmark and Singapore and significantly more accurate results have been obtained in comparison with other techniques.

The paper by Lekkas *et al.* also deals with Flow Forecasting and presents state-of-the-art variations of two competing methods, namely non-linear transfer functions and modified recurrent cascade-correlation artificial neural networks. The forecasting performance of both methods are objectively compared for a case study of the UK River Trent, with results revealing that both methods perform equally well in this case. The best overall performance was obtained using the recurrent modified cascade-correlation ANN, with real-time updating techniques subsequently applied leading to improved forecasting accuracy, particularly for poor models.

The paper by Yeung deals with the development and application of a new hydroinformatics tool for the planning, design and efficient operation of water supply reservoirs. Bankside water supply service reservoirs can often encounter adverse water quality indicator characteristics due to changes in operation which, in turn, can affect the internal velocity distribution and retention time within the reservoir. Although CFD tools have been widely used to predict the velocity distributions in fixed reservoir configurations and for various inlet/outlet conditions, such tools are not ideally suited to on-line reservoir management. Yeung proposes a new multi-channel vector approach to model recirculation patterns in service reservoirs, with the scope of the model being capable of on-line control of chlorine residuals at the outlet of a reservoir for varying flow boundary conditions.

The paper by Spanou and Chen highlights the development of an object-orientated water quality management tool and its application to the upper River Mersey basin in the UK. The software includes new tools for the construction of flow duration and low-flow frequency curves using different methods, the sensitivity analysis and parameter estimation of the water quality model and the stochastic simulation of point-source inputs. The results of the study are in general agreement with published results.

Finally, the organisation of the biennial hydroinformatics conference continues, with the next conference being held in Cardiff, UK, from 1st to 5th July 2002. The conference is being organised jointly by Cardiff University and the University of Bristol and will be held at Cardiff City Hall, the centrepiece of one of the world's finest civic centres. For further details, please contact:

Cherrie Summers, Hydroinformatics 2002 Secretariat
Tel/Fax: + 44(0)29 2087 4421
Email: summersc@cardiff.ac.uk
*http://www.cf.ac.uk/engin/news/confs/hydro*

If you wish to submit an abstract then please do so as soon as possible or by 21st September 2001. The latest arrangements for the conference will be on display at the XXVIIth IAHR Congress in Beijing, from 16th–20th September 2001, where all readers are most welcome to attend the IAHR/IWA Hydroinformatics Section Committee meeting.

I hope that you will find this issue of the *Journal of Hydroinformatics* to be of interest and the Local Organising Committee of Hydroinformatics look forward to welcoming you to Cardiff in 2002.

**Roger Falconer**
***June 2001***