ICWRER Special Session Proposal

2022 International Conference on Water Resources and Environment Research (ICWRER)

**Special Session Title**

***Conflict Resolution for Complex Water Resources and Environmental Systems***

**Session Organizer**

**Chair**

Keith W. Hipel (University of Waterloo, Canada; kwhipel@uwaterloo.ca)

**Co-Chair**

Liping Fang (Ryerson University, Canada; lfang@ryerson.ca)

**Co-Chair**

Simone Philpot (University of Waterloo, Canada; sphilpot@uwaterloo.ca)

**Session Description**

Achieving long-term sustainable development requires focused attention on the coordinated management of societal and environmental systems. Interdisciplinary solutions are needed to support responsible governance aimed at maximizing the benefits gained by society from a range of activities, such as agricultural and industrial production, while proactively minimizing their negative impacts on the environment. Informative decision technologies, such as conflict resolution and multiple objective decision making (ex. preference modeling in multiple criteria decision analysis), are required to effectively address many serious controversies arising over the utilization of our valuable water and natural resources for economic and other purposes within a complex systems of systems engineering context.

A special track of sessions on conflict resolution will establish a forum for discussing and disseminating recent advances in the development and application of conflict resolution methods (ex. meaningful expansions of the Graph Model for Conflict Resolution) for finding interdisciplinary solutions to challenges arising in complex water resources and environmental systems.

Topics within this overall theme include the formal investigation of disputes arising over water quantity and quality issues such as the fair allocation of scarce water resources, utilization of water in energy production, impacts of climate change, carbon trading and taxation, exportation of water in bulk quantities, widespread water pollution, and compliance to environmental regulations. Authors wishing to participate in this session should indicate their desire to be included in this Conflict Resolution session when they submit their abstracts.

Invited Speakers:

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| Invited Speaker | Affiliation | Presentation Title |
| Ajar Sharma1Vanessa Schweizer2Keith W. Hipel3 | 1Knowledge Integration and Systems Design Engineering, University of Waterloo, Ontario, Canada (a365shar@uwaterloo.ca)2Knowledge Integration, University of Waterloo, Ontario, Canada (vanessa.schweizer@uwaterloo.ca)3Department of Systems Design EngineeringUniversity of Waterloo, Waterloo, Ontario, Canada (kwhipel@uwaterloo.ca) | Using Expert elicitation to facilitate Systems of System analysis in the Cauvery River Basin |
| Mohsen Shahbaznezhadfard1Saied Yousefi2 | 1 Environmental Engineering, University of Tehran, Tehran, Iran (m.shahbaznezhad@ut.ac.ir)2Department of Architecture, University of Tehran, Tehran, Iran; Faculty Team Member, Department of Systems Design Engineering, University of Waterloo, Ontario, Canada (sdyousefi@ut.ac.ir) | Integrated Study of the Tigris-Euphrates Basin Complicated Conflict Using Dynamic-Based Graph Model for Conflict Resolution |
| Mohsen Shahbaznezhadfard1Saied Yousefi2 | 1Environmental Engineering, University of Tehran, Tehran, Iran (m.shahbaznezhad@ut.ac.ir)2Department of Architecture, University of Tehran, Tehran, Iran; Faculty Team Member, Department of Systems Design Engineering, University of Waterloo, Ontario, Canada (sdyousefi@ut.ac.ir) | The Impact of the COVID-19 Pandemic on Water and Environmental Conflicts: A Game Theoretic Insight |
| Simone Philpot1Keith W. Hipel2 | 1Department of Systems Design EngineeringUniversity of Waterloo, Waterloo, Ontario, Canada (sphilpot@uwaterloo.ca)2Department of Systems Design EngineeringUniversity of Waterloo, Waterloo, Ontario, Canada (kwhipel@uwaterloo.ca) | “We are going to make sure it doesn’t happen one way or another” Investigating an ongoing dispute over the proposed Campbellville quarry in Ontario, Canada. |
| Mitra Pourvaziri1Samira Mahmoudkelaye2Saied Yousefi3 | 1College of Architecture, University of Tehran, Tehran, Iran (Mitraid@yahoo.com)2 Project Management and Construction Group, University of Tehran, Tehran, Iran (s.mkelaye.91@alumni.ut.ac.ir)3Department of Architecture, University of Tehran, Tehran, Iran; Faculty Team Member, Department of Systems Design Engineering, University of Waterloo, Ontario, Canada (sdyousefi@ut.ac.ir) | Proposing Genetic-Algorithm-Based Graph Model for Conflict Resolution for Optimizing Conflict Environmental Solutions |