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Model Uncertainty in Water Science: Conceptualization, Assessment and Communication

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Deadline for manuscript
submissions:

closed (31 December 2019)

Message from the Guest Editors

Substantial research has been devoted to uncertainty quantification in water sciences in the last few decades. More recently, an actively-investigated aspect is the uncertainty arising from the definition of alternative model conceptualizations describing complex hydro(geo)logical systems. Such systems are, more often than not, conceptualized on the basis of limited, or even biased, data and knowledge, therefore accepting multiple interpretations. This ‘conceptualization problem’ will have substantial impacts on uncertainty quantification and ultimately on risk assessment and water management. This line of research has opened multiple questions from ways to properly define alternative conceptualizations, the value of data/information/knowledge to reduce model uncertainty, model structure diagnostics, frameworks to efficiently combine (or select from) multiple conceptualizations/working hypotheses, to the link with robust risk assessment frameworks. [...]



mdpi.com/si/18345

Special issue



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Journal Rank: JCR - Q2 (*Water Resources*) / CiteScore - Q1 (Water Science and Technology)

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