

## A Review on Water Models of Surface Water Environment

**Authors :** Shahbaz G. Hassan

**Abstract :** Water quality models are very important to predict the changes in surface water quality for environmental management. The aim of this paper is to give an overview of the water qualities, and to provide directions for selecting models in specific situation. Water quality models include one kind of model based on a mechanistic approach, while other models simulate water quality without considering a mechanism. Mechanistic models can be widely applied and have capabilities for long-time simulation, with highly complexity. Therefore, more spaces are provided to explain the principle and application experience of mechanistic models. Mechanism models have certain assumptions on rivers, lakes and estuaries, which limits the application range of the model, this paper introduces the principles and applications of water quality model based on the above three scenarios. On the other hand, mechanistic models are more easily to compute, and with no limit to the geographical conditions, but they cannot be used with confidence to simulate long term changes. This paper divides the empirical models into two broad categories according to the difference of mathematical algorithm, models based on artificial intelligence and models based on statistical methods.

**Keywords :** empirical models, mathematical, statistical, water quality

**Conference Title :** ICSEWQSWM 2017 : International Conference on Sanitary Engineering, Water Quality and Solid Waste Management

**Conference Location :** Boston, United States

**Conference Dates :** April 24-25, 2017