



Advances in Fuzzy Systems

Special Issue on **Applications of Soft Computing in Environmental Engineering**

CALL FOR PAPERS

The real-life environmental problems are very complex and highly dependent on several process configurations, different influent characteristics, and various operational conditions. For a sustainable control of environmental related problems, the proposed systems must be continuously monitored and properly controlled due to possible instabilities in circumstance conditions. Although statistical models may be able to establish a relationship between the input and the output variables without detailing the causes and effects in the formation of pollutants, they are not capable of capturing the inherent nonlinear nature of the environmental problems. For this reason, the complicated interrelationships among a number of system factors in the process may be explicated through a number of attempts in developing representative artificial intelligence-based prediction models allowing the investigation of the key variables in greater detail. Additionally, artificial intelligence-based control of real-time process variables may provide several potential advantages, such as protection of the system from possible risks associated with significant fluctuations in influent characteristics, optimization of the process at a reasonable cost, providing a rapid evaluation and estimation of pollutant loads and emissions on an energetic basis, and also development of a continuous early-warning strategy without requiring a complex formulation and laborious parameter estimation procedures.

The special issue is aimed at bringing forward original and high-quality research papers addressing the recent trends and efforts in the application of intelligent and fuzzy systems in environmental engineering. We are especially interested in contributions describing the new applications, opportunities, algorithms, and advances in artificial intelligence-based modeling of real-world environmental processes. This special issue will bring together well-focused papers and recent developments of intelligent and fuzzy systems. After a peer review decision is made, these papers are categorized according to the various aspects of contributions. Fuzzy logic, fuzzy clustering, fuzzy reasoning, fuzzy classification, fuzzy statistics, fuzzy machine learning, and decision-making or decision support systems.

Potential topics include, but are not limited to:

- ▶ Fuzzy logic-based control systems
- ▶ Artificial neural networks (ANN)
- ▶ Adaptive neurofuzzy inference systems (ANFIS)
- ▶ Support vector machines (SVM)
- ▶ Multiobjective genetic fuzzy systems, genetic algorithms, and programming
- ▶ Implementation of artificial intelligence-based methodologies for modeling of various real-life processes in the environmental engineering field such as water and wastewater treatment, air or soil pollution, solid waste management, anaerobic digestion, and posttreatment technologies

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/afs/asce/>.

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