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Development of a neuro fuzzy modelling tool for a decision support system in desalination in coastal zones

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ABSTRACT

The advances in models based on fuzzy neuronal logic networks in field of water quality in the last few years have been quite significant. This article develops a decision tool based on this methodology that allows the analysis of instant and seasonal behavior of brine discharge from desalination plants into the sea. This is to establish management measures to maximize discharge dilution and thereby reduce brine impact on the receiving medium. Over 70% of the increase in salinity of the affected area can be explained by just three significant variables: one associated to brine discharge, one associated to seasonality and one associated to climate conditions.

Keywords: ASDECO; Brine discharge; Brine plumes; Brine dispersion forecast system; Support tool for decision making; Desalination; Neural network; Fuzzy logic; Dilution

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