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REAL TIME MONITORING OF WATER QUALITY IN AN AGRICULTURAL AREA WITH SALINITY PROBLEMS

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Abstract

Agriculture is a highly water-demanding sector. Developed in recent years, the precision farming approach allows to optimize irrigation without compromising crops productivity. WSN networks are a key element of this approach because they allow to monitor continuously large number of parameters providing the possibility of a real-time intervention on field management practices. The WSN networks can be used to measure traditional parameters such as precipitation, soil moisture, or irradiation and others such as the quality of irrigation water and groundwater. The qualitative monitoring of these parameters is essential when the cultivation is carried out under complex conditions such as those represented by soils with salinization problem. This work fits this context by presenting the results of the first 13 months of an experimental campaign aimed at the measurement of soil, water (quality of irrigation and drainage water of the fields) and groundwater parameters by a WSN system. This paper analyzes results of this activity and provides practical suggestions to ensure a more efficient system.

Keywords: Monitoring Precision Farming; salinity; water management; WSN

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