



SDI Review Form 1.6

Journal Name:	<u>British Journal of Applied Science & Technology</u>
Manuscript Number:	Ms_BJAST_30934
Title of the Manuscript:	Hourly Real-Time Rainfall Estimation for Improved Smart Irrigation System Using Nearby Automated Weather Station
Type of the Article	

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	Introduction When analysing closed loop system for smart irrigation, it is suggested to refer to <i>R. Romero, J. Muriel, I. García, and D. Muñoz-de-la Peña, "Research on automatic irrigation control: State of the art and recent results," Agricultural Water Management, vol. 114, pp. 59–66, July 2012.</i> Subsection 2.3 It does not provide information on how soil moisture sensors are used to calculate irrigation demand. Since it only gives general information about soil moisture sensors. The statement "To increase the accuracy of irrigation calculation the number of soil moisture sensors can be used at different depth of soil level" is not necessarily correct since different levels provide different information that cannot be aggregated. Subsection 2.4 The results presented on Table 1 are not further referred in the paper, so for the scope of this work these results are not relevant. Furthermore, it is not specified which units are used for measuring soil moisture, if the percentage refers to volumetric water content the values around 75% are to high to be measured by the sensors. Section 3 The content of section 3 is not a description of a case study, it just gives general information about the regions. But it does not provide any technical	



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	information about how the experiments were conducted and what were the conditions presented by each region. <u>Section 4</u> Information presented in this section only considers a specific case, but it does not demonstrate a methodical approach on delaying irrigation based on rainfall information. A mathematical model should be provided in this section. <u>Section 5</u> This section probably is probably the most important part of the paper, however it just only gives general information about Artificial Neural Network. It would be expected to give detailed information about which variables were used, and how they were processed by the ANN approach. Figure 7 is too general at this level of the paper. There is not any results that measures how well the proposed ANN algorithm works for estimating rainfall. <u>Section 6</u> This paper states that 152000 liters of water were saved by using the proposed approach, however a more extensive set of experiments should be conducted in order to indicate any water saving numbers. Table 5 is not relevant, and statistical information should be provided by comparing different test cases and experiment scenarios. Results are weak and they are not convincing.	
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<u>Minor</u> REVISION comments	<u>Line 18:</u> Acronyms NCMRWF and NCR are not defined <u>Lines 116-118:</u> Uses roman numbering instead of Arabic when referring to sections <u>Fig. 1</u> - AWS should substitute ASW There are some grammatical errors in the paper, so deep grammatical revision should be conducted.	
<u>Optional/General</u> comments	This paper proposes the use of rainfall estimation to modify irrigation scheduling and save water. Although, this is an interesting idea, the implementation is not clearly explained and the presented results are insufficient. The overall paper content is confused and repetitive. A lot of modifications are required since the paper presents some general ideas but important technical details are missing. There are not any relevant results based on statistical data, neither the test cases are specified.	

Reviewer Details:

Name:	<i>Camilo Lozoya</i>
Department, University & Country	<i>Tecnologico de Monterrey, Engineering School, Mexico</i>