Dear Editor,

we are pleased to submit our paper for the publication in the Special Issue of ACTA IMEKO. The paper is an extension of the research presented in the *2019 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor)* held in Portici (Italy) and subsequently published in the proceedings of the same conference.

The paper presented at the workshop was entitled “Combining satellite data and Machine Learning techniques for irrigation Decision Support Systems” and regarded the analysis of two Artificial Neural Network (ANN) models, a feedforward Multi-Layer Perceptron and an ANFIS (Adaptive Network-based Fuzzy Inference System), trained to reproduce the behavior of satellite measurements of soil moisture using meteorological variables as inputs. The main extension we made consists in the addition of a third ANN model in the analysis, namely a Long-Short Term Memory (LSTM) network. This is actually a major improvement in the study since eventually it turned out that this LSTM model is the one with the best performances. Some minor modifications have also been made to the other two considered models: the training of the latter was indeed slightly improved, as can be observed from the performance metrics (RMSE and Nash-Sutcliffe efficiency index).

In the following we briefly report a list of the modification made in the manuscript:

* The title of the paper has been changed to “Neural network models for soil moisture forecasting from remote sensed measurements” in order to distinguish it from the original Symposium one.
* The *Abstract* has been adjusted in accordance with the addition of another ANN model.
* The *Introduction* has been rearranged in a different fashion; a reference has been added (ref [1]).
* In *Materials and methods* section a more detailed discussion on the Soil Water Index variable has been added. The description of the new LSTM model taken into account has been introduced. Furthermore, the paragraph with the description of the regularizations used to prevent overfitting has been changed. Four references have been added (ref.s [17], [18], [19], [23]).
* The *Results* section has been modified according to the novel outcomes of the analysis (different results, plots, and discussions).
* Also, the *Conclusions* has been changed according to the new results. At the end of this section a discussion on the applicability of the proposed approach and in particular on its spatial scale resolution has been appended. This comment is consequence of a question received at the Workshop. In this discussion a further reference has been added (ref. [26]).

Hoping that you may find this new improved version of the paper well suited for publication in Acta IMEKO journal, we look forward to hearing from you soon.

Kind regards,

The authors

Andrea Marini, Loris F. Termite, Alberto Garinei, Marcello Marconi, Lorenzo Biondi