



SDI Review Form 1.6

Journal Name:	Journal of Agriculture and Ecology Research International
Manuscript Number:	Ms_JAERI_21622
Title of the Manuscript:	Prediction of unsaturated hydraulic conductivity of agricultural soils using artificial neural network and c#
Type of the Article	Original Research 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.

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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	1. What are the parameters in C# program? Which parameters are much more sensitive for you to evaluate your real results with the ones of program? 2. The numbers of Equations (Eqs. (1) and (2); Eqs. (9), (10), and (11)) are not consistency with the description in the manuscript. Some numbers are not in order. Some are lost. You had better check again. (Where is your Eq.(12)?) 3. Are the definitions of C1 between equations Eqs.(4) and (5)? Are they the same/ 4. What are the applicable ranges of r0 and h0 in Eqs. (6) and (7)? 5. What is the different between volume soil moisture content in Eq. (1) and ratio of total volume pores in Eq.(2)? (In fact, this two numbers of Equations is upside down.) 6. How many real field data do you use to analyse and compare? Do you analyse with z-distribution or t-distribution? ANOVA? Coefficient of variation (standard deviation/ mean)? 7. RMSE is not only one value for description, you had better to show your applicability of your research.	First, we would like to thank the Reviewer for his valuable comments. 1. What are the parameters in C# program? Which parameters are much more sensitive for you to evaluate your real results with the ones of program?. <u>Answer:</u> In the manuscript, Fig. (8) shows that eight parameters are in in C# program. The parameter clay content in the soil is more sensitive. 2. The numbers of equations Eqs. (1) and (2); Eqs. (9), (10), and (11) are not consistency with the description in the manuscript. Some numbers are not in order. Some are lost. You had better check again. (Where is your Eq. (12)? <u>Answer:</u> We re-arrange the numbers of equations in the manuscript to be 15 instead of 16. 3. Are the definitions of C1 between equations Eqs.(4) and (5)? Are they the same. <u>Answer:</u> Yes, first the constant C1 is obtained through data drawn as



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		described in Fig. 2 from the polynomial equation, then this constant is used to calculate unsaturated hydraulic conductivity. 4.What are the applicable ranges of r_0 and h_0 in Eqs. (6) and (7)? <u>Answer:</u> The van Genuchten parameters for the 12 texture classes were obtained from Carsel and Parrish [38] and ranges of r_0 and h_0 in Eqs. (6) and (7) are included in a table in that references r_0 is radius and mini-disc infiltrometer manual put it as 2.25 cm and h_0 is in the range -0.5 to -7 cm. 5.What is the different between volume soil moisture content in Eq. (1) and ratio of total volume pores in Eq.(2)? (In fact, this two numbers of Equations is upside down). <u>Answer:</u> We correct numbers of equations in yellow color in the manuscript and in Eq. 1, volume soil moisture content is different about ratio of total volume pores in Eq.2. These two equations are extracted from references. 6. How many real field data do you use to analyse and compare? Do you analyse with z-distribution or t-distribution? ANOVA? Coefficient of variation (standard deviation/ mean)? <u>Answer:</u> We used minimum, maximum, standard deviation, coefficient of variation to describe the variables as listed in Table (2). Due to the limited experiments, 9 real field data were used, but each variable has wide range to create another real data. We do not analyse the data with z-distribution or t-distribution and ANOVA due to the purpose was to collect data to
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		develop C# interactive program. 7.RMSE is not only one value for description, you had better to show your applicability of your research. <u>Answer:</u> We use three statistical indices not only RMSE to evaluate the predicted data. The applicability of the developed C# interactive program is clear as it could be used to estimate unsaturated hydraulic conductivity of wide range of agricultural soils.
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		