Reply to the comments by Tarkan Erdik and Zekai Şen on 'A comparative study of ANN and neuro-fuzzy for the prediction of dynamic constant of rockmass'

T N Singh[1,*], R Kanchan[2], A K Verma[2] and K Saigal[2]

[1]*Department of Earth Sciences, Indian Institute of Technology, Powai, Mumbai 400 076, India.*
[2]*Institute of Technology, Banaras Hindu University, Varanasi 221 005, India.*
[*]*e-mail: tnsingh@iitb.ac.in*

Reply 1

The tan-sigmoid transfer function in the hidden layer and a linear transfer function in the output layer. Weights have been randomized.

Reply 2

It was used because the system was relatively smooth and trained to cover all likely events. Also, we carried out a parametric analysis with different MF types and found that Gaussian MF is working well.

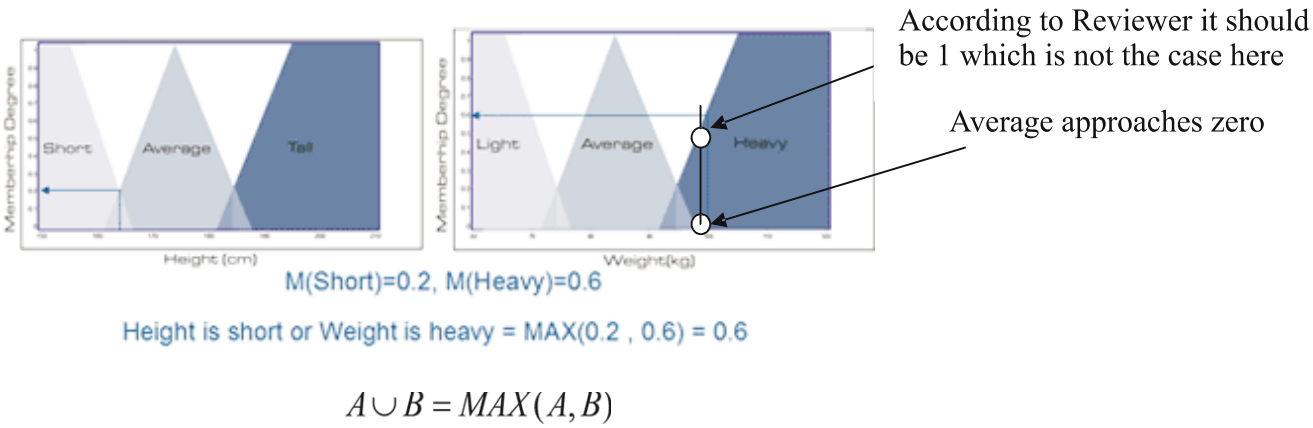
Reply 3

Our intention was to show readers only about the deviation of predicted value from the observed value.

Reply 4

Figure showing the fuzzy rule for height is short or weight is heavy.

http://blog.peltarion.com/2006/10/25/fuzzy-math-part-1-the-theory/



Keywords. Transfer function; Gaussian membership functions; Gaussion distributions.

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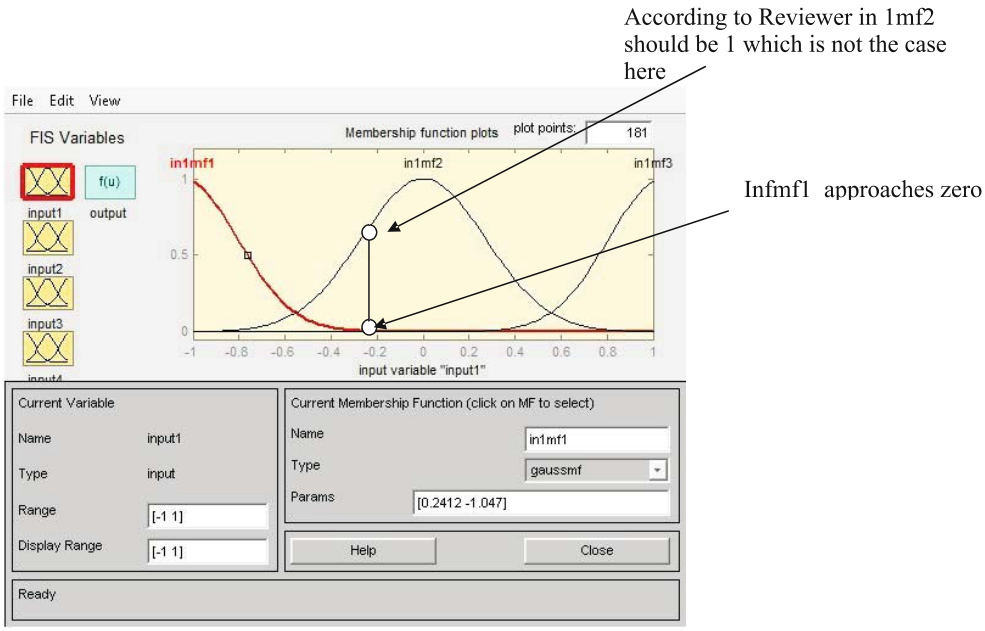


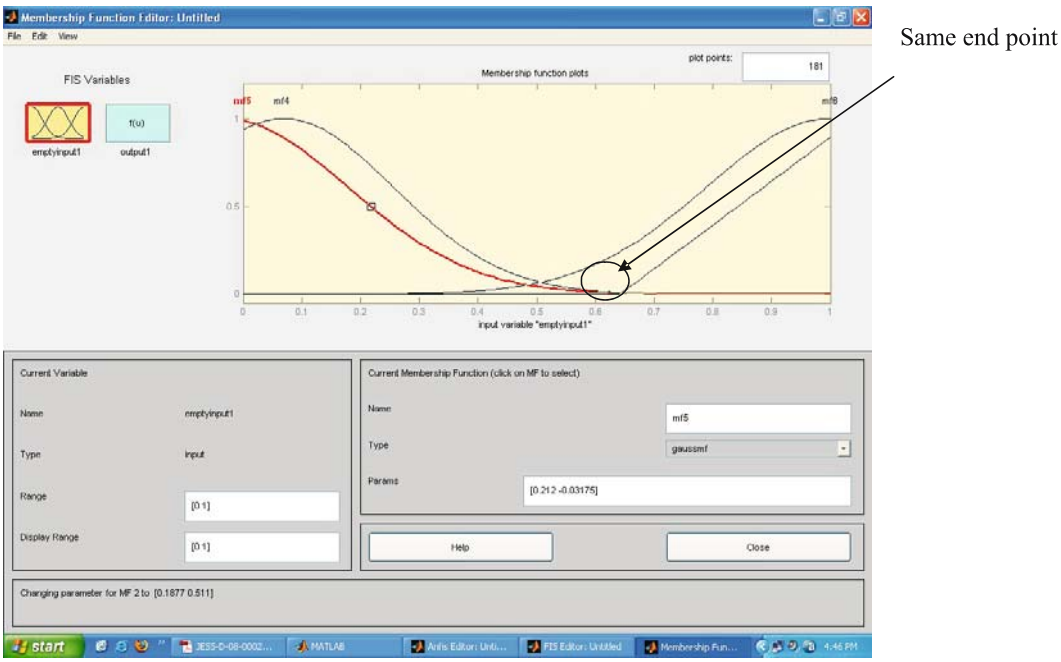
Reply 5

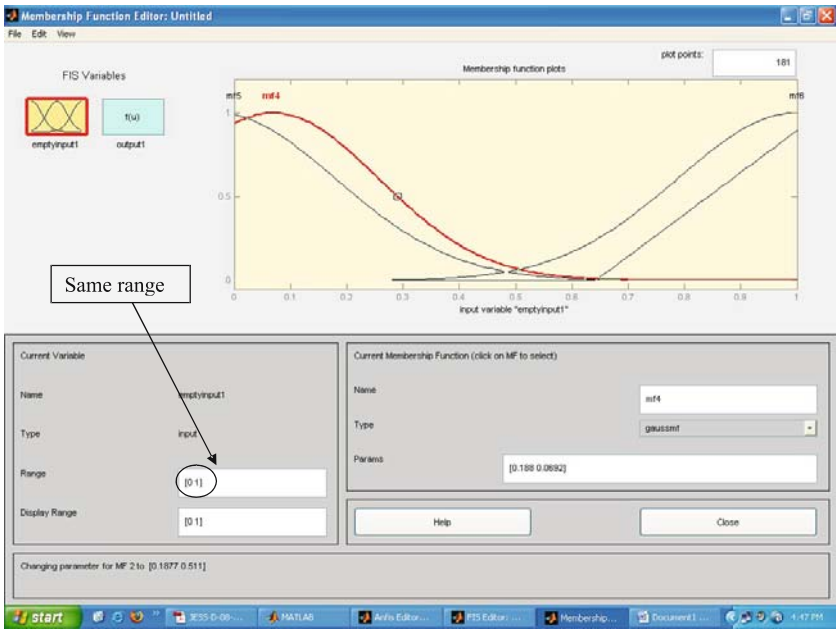
There is no input value less than zero for inp2.

Reply 6

Figure showing membership functions for input values less than zero and same end points for two MF's.

I am presenting a similar case where two membership functions should have the same x values range. But in the range window, you will find that it is always same [0 1]. This is because what the reviewer describes as "same range" cannot be determined by values on x-axis. The pattern is governed by parameters [Params] of the Gaussian function. The two membership functions are





different because their Gaussian parameters are different. Same end points of mf5 and mf4 does not mean that they are similar. It is determined by the shape of the function. The two have same data points but **with different distributions**

$$f(x, \sigma, c) = e^{\frac{-(x-c)^2}{2\sigma^2}},$$

Gaussian function depends on two parameters σ and c.

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