Use of Asymmetric In Shape Fuzzy Membership Functions on a Land Evaluation Study in an Agricultural Experimental Field in Venezuela

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The ranges of certain variables can determinate the suitability or not of one field for some agricultural use. However, maybe a higher (lower) level of the range is more harmful than a lower (higher) level, indicating an asymmetric unsuitability. This suggests that the use of a semantic import model with different shape parameter in the lower and higher levels of the variable fuzzy membership function could represent more appropriately the characteristic under study. In this work we use this concept in a land evaluation study based mainly in sand, organic matter and pH. We obtain empirically appropriate membership functions. Based in an interpolated grid obtained by kriging, the membership values were mapped by isolines. The proposed methodology seem to be appropriate for a more effective land evaluation studies of agricultural systems.