Abstract

The distribution of soil classes is an important factor in agricultural soils. In order to generate the soil classification, fuzzy soil classifications were developed to provide the means to characterize and quantify the soil classes. This paper presents an index of fuzzy soil classification generated by Fuzzy C-means classification. The ability of classification of the soils is tested with a Soil database. Fuzzy c-means approach is also capable of handling the uncertainty existing in soil parameters. As a result, fuzzy c-means clustering can be successfully applied to classify soils.

Reference

- Bezdek, JC (1981). Pattern Recognition with Fuzzy Objective Function Algorithms,
Plenum, New York.
- Jain, A.K, Murty, M.N, Flynn, P.J.: Data Clustering: A Review
- Ball, G.H., Hall, D.J.: ISODATA, A Novel Method of Data Analysis and Pattern
Recognition.
- Raja, A.,Meister, A., Martverk., P.: Fuzzy Classification Algorithms with Some
Applications.
K-Means-Based Fuzzy Classifier Design.
modified fuzzy k-means with extragrades.
- A Thesis by D.Basavaraju Characterisation and classification of soils in Chandragiri
mandal of Chittoor district,Andhra Pradesh.
- A thesis titled “Characterization, Classification and Evaluation of Soil Resources in
Sivagiri Micro-Water Shed of Pichatur Mandal, Chittoor District, Andhra Pradesh”.
- A thesis titled “Morphology and Taxonomy of Soils in Ramachandrapuram Mandal of
Chittoor District, Andhra Pradesh”.
- George J. Klir and Bo Yan. Fuzzy Sets and Fuzzy Logic. Theory and Applications, PHI.
Conservation Services, USDA, Blacksburg, Virginia.
No. 18.

Index Terms
Computer Science Fuzzy Systems

Key words
C-Means
Soil database

Soil Classification

Fuzzy