Satellite Image Classification Using Firefly Algorithm

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Abstract : In the recent years, swarm intelligence based firefly algorithm has become a great focus for the researchers to solve the real time optimization problems. Here, firefly algorithm is used for the application of satellite image classification. For experimentation, Alwar area is considered to multiple land features like vegetation, barren, hilly, residential and water surface. Alwar dataset is considered with seven band satellite images. Firefly Algorithm is based on the attraction of less bright fireflies towards more brightener one. For the evaluation of proposed concept accuracy assessment parameters are calculated using error matrix. With the help of Error matrix, parameters of Kappa Coefficient, Overall Accuracy and feature wise accuracy parameters of user's accuracy & producer's accuracy can be calculated. Overall results are compared with BBO, PSO, Hybrid FPAB/BBO, Hybrid ACO/SOFM and Hybrid ACO/BBO based on the kappa coefficient and overall accuracy parameters.

Keywords : image classification, firefly algorithm, satellite image classification, terrain classification

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