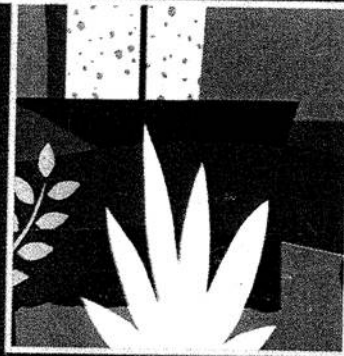
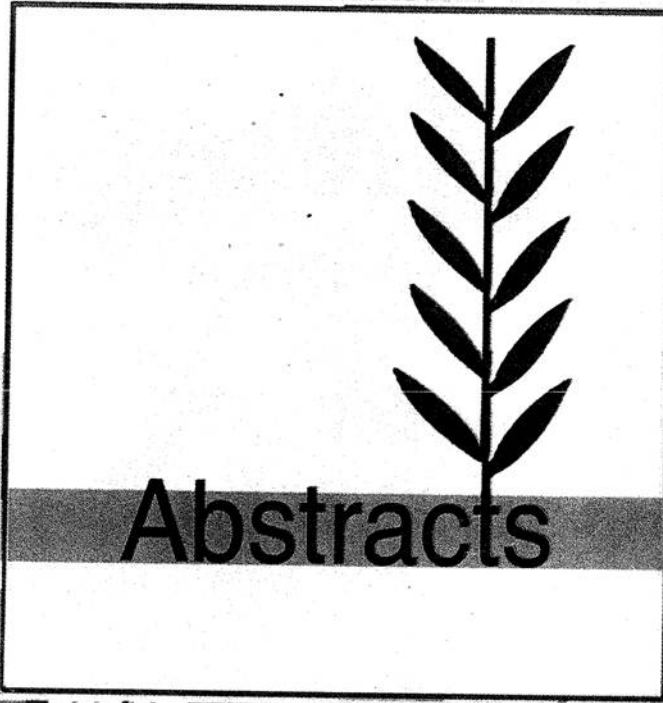


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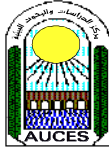


March 22-24, 2016

Assiut - Egypt

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and Environment in the Arab World**

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DIFFERENTIATING FOREST TYPES USING TERRASAR-X SPOTLIGHT IMAGES BASED ON FACTOR ANALYSIS

Dalia Farghaly, Emad Elba, Brigitte Urban

Faculty of Sustainability Sciences, Institute of Ecology, Division of Landscape Change,

LEUPHANA University of Lueneburg, Lueneburg, Germany

Email: dalia.farghaly@stud.leuphana.de

(Poster)

ABSTRACT:

This study investigated how Factor analyses tool in SPSS statistical package can be used to distinguish between different types of the forests using TerraSAR-X images in order to detect the changes in distribution and extension of the forests. Fuhrberg city is located within a drinking water protection area about 30 km north of Hanover.

The investigated area is about 3200 hectares including 1400 Hectares of forests. 12 areas were surveyed with a 15 Hectares area stand for 1% of the investigated forest area. The major forest types were Deciduous, pine and mixed forests. 14 TerraSAR-X satellite imagery in dual-polarization (HH, VV) were used to monitor the forests in the period from March 2008 to January 2009. The images were processed using lee adaptive filter. The tested areas were isolated from the 14 TerraSAR-X Satellite Imagery, and the reflection values were investigated using the factor analysis to get the component matrix.

The study showed that the values of the component matrix remain invariable for the pine forests. On the other hand, the deciduous and the mixed forests remain constant from April to October and decreased from November to January due to the loss of the tree leafs in the autumn season.

The study recommended to use the TerraSAR-X to distinguish between the forest to estimate the changes in forest distribution and ensure sustainable forest management.