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LABELING OF CLUSTERS BASED ON CRITICAL ANALYSIS OF TEXTURE MEASURES

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Abstract. It is well known that unsupervised classification of a single polarized SAR image is accomplished mainly by two steps i.e., (i) Clustering the SAR image into groups or clusters on the basis of backscattering coefficient and textures present in SAR image, and (ii) Labeling the various clusters in their respective class (For example, land cover types such as water, urban, agriculture or any other areas). In this context, labeling is termed as naming the various clusters or groups of pixels according to nature of the terrain as a certain land cover type it belongs to. Labeling of various clusters is a crucial and important aspect to identify various clusters in their original class (here, land cover class is assumed as class, whereas, in general, class may refer to any group of targets). It is still a challenging task to label the cluster without any a priori information. So, it is important to develop such a technique by which clusters can be labeled according to their class. Therefore, focus in this paper is to induct surface roughness with backscattering coefficient to label various clusters (i.e. major land cover types). We have proposed an empirical relation to estimate roughness parameters from the SAR image. Labeling of clusters was carried out on the basis of roughness parameters and backscattering coefficient.

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