

SOIL INTERPRETATION OF MSS DATA DIGITAL PROCESSING

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Thematic interpretation is one of the basic problems of compiling soil maps on the basis of digital processing multispectral remotely sensed data. Complication of the problem lies in the complex nature of registered spectral signal describing soil-vegetation system. Identification of crops and evaluation of their state are based on the Tasseled Cap Transformation by Kauth and Thomas and its latest modifications aimed to diminish soil influence on spectral index. To solve the opposite task a method was elaborated based on graphic analysis of mean digital values of clusters in the green - red and (green-red) - (NIR-red) projection in conjunction with visual analysis of cluster maps and spectral curves and their interpretation on the basis of thematic maps and ground data. The most essential element of the method is the graphic analysis of mean DV of clusters that reveals a stable regularity in their distribution. This regularity makes it possible to interpret the soil cover of arable lands when the vegetation density was to 50 per cent and to differentiate the soils in regard to their water regime. The method was elaborated in the Ciscaucasion region on area 1600 km². Its application to the MSS data received in the autumn season permitted compilation of a soil map of the territory with an accuracy of about 0.82 and significantly increased informativity concerning the geographical regularities of soil distribution and the anthropogenic changes in soil cover under irrigation. The approbation of the method in Ciscaucasia and Moldova gave quite satisfactory results.