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Author: Dr. Fazil Ismailov
Shamakhy Astrophysical Observatory, Azerbaijan, isfazil555@gmail.com

Dr. Namig Jalilov
Azerbaijan, namigd@mail.ru
Dr. Chinqiz ABDURAHMANOV
Azerbaijan, isfazil@yandex.ru

METHOD AND PRACTICAL RESULTS OF PROCESSING SPACE IMAGES OF THE
CAUCASUS-CASPIAN REGION

Abstract

The method under consideration belongs to the field of space monitoring of natural and climatic conditions at the regional and local levels. The problem of preliminary and thematic processing of regional space images is being solved step by step in relation to various climatic conditions of the Caucasus-Caspian region. Essence: in this work, a complex of tasks for processing regional satellite images is disclosed in detail, analyzed and solved, on this basis, software for the acquisition and processing of satellite images of the Caucasus-Caspian region is developed. Processing of space images is carried out by using GIS applications and independent computer programs of the MATLAB environment. A complex of interrelated problems is being solved: regional optical modeling of the atmosphere, radiometric correction of the influence of the atmosphere. On the basis of the data obtained from multichannel regional satellite images, the atmospheric-corrected values of the spectral brightness coefficient of the underlying surface are determined pixel by pixel. These data are used to calculate the vegetation indices of the soil and vegetation cover and classify the heterogeneous soil and climatic zones of the Caucasus-Caspian region: semi-deserts and deserts, steppes, mountainous and foothill regions.