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The survey of satellite photo (Cosmose) for prepare erosion map based upon geomorphology map&GIS

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Abstract

Erosion is one of the most important threats to natural resources and agricultural lands. In this connection, preparing erosion form maps is most urgent than preparing maps of erosion intensity. For this purpose, various sources, especially geomorphology maps, aerial photos, and satellite images are used in this research. Making field surveys is also highly helpful. The frequency of field survey is usually in accordance with the scale of maps but there is no standard procedure for field surveys. This research, which was carried out in Merek area, Kermanshah Province, is aimed at examining the practicality of the images taken by Cosmos Satellite for geomorphologic studies and preparation of erosion forms maps with a scale of 1:50000. For this purpose, after preparing the erosion forms map and interpreting the Cosmos satellite's image and geomorphologic facies (by GIS), five sloping amplitude in each facies were chosen for field studies. A conclusion based on comparing photos and field studies shows accordance between the photos and results of field study was above 70% when waterways, gullies, and landslides were considered while this conformity for sheet and traces erosion was acceptable to some degree. The comparison showed conformity between the two methods for rills and snow erosion was below 50%. Additionally, the photo are not able to reveal piping erosion. The result of comparison between sloping amplitude in facies for initial conformity degree more than 70% in 29 facies, 60%-70% in 34 facies and less than in 14 facies. Therefore, boundaries of the facies should be adjusted according to field studies and make slight corrections in the second state. Concerning the third state, the facies should be converted into two facies.

Key Word: Erosion forms, Merek basin, Geomorphology, Cosmos photo, interfluves, talwage, facies, GIS