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Alteration mapping for geochemical exploration in Niazgholi-Moshiran area,Using Aster data

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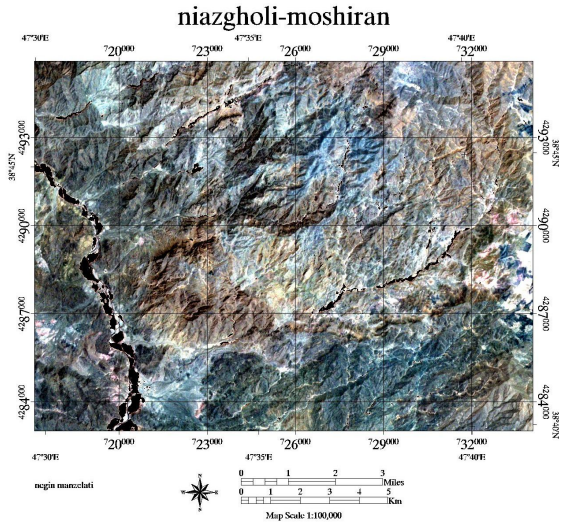
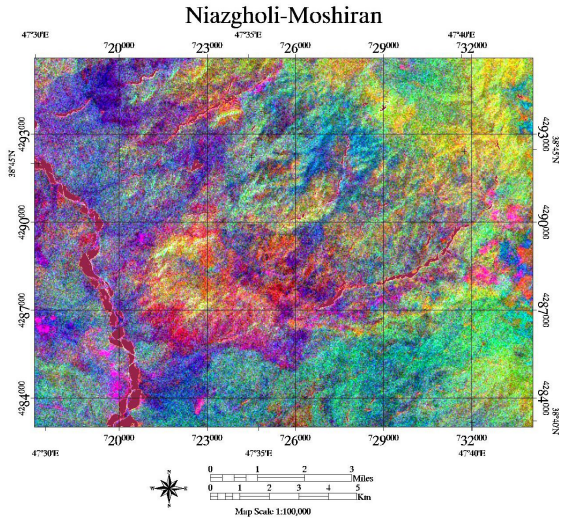
Niaz Gholi-Moshiran region is located in the 1: 100000 of Lahroud in the northwest of Ardabil province. Geologically, most of the area is covered with Paleocene-Eocene rocks which consist of volcanic sections with andesite, tephrite and andesite trachyte parts which are observed along with andesitic-tephritic pillow lava. The main image analysis techniques in this study were false color combination and color composite ratio. Due to the presence of Mg-OH bond, montmorillonite, kaolinite, muscovite and illite minerals (Index of phyllic and argillic alteration zones) show maximum reflection in band 4 of SWIR and low reflection in band 6(due to the presence of Al-OH bond),. so in the color combination of 468, argillic and phyllic alterations are red to pink and propylitic alterations are green because of high reflection of index minerals (chlorite and epidote) in band 5 and 6 beside of low reflection in band 8(due to the presence of Mg-OH bond)(FIG1). Also the color composite ratio method (bands 4/5, 9/8 , 5+7/6 respectively in RGB) was used to highlight alteration mapping (the argillic in red, propylitic in green and phyllic in blue)(FIG2).

FIG1: Aster ratio image (bands 4,6,8 in RGB)

FIG2: Aster ratio image (bands 4/5, 9/8, 5+7/6 in RGB)





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