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URANIUM EXPLORATION BY REMOTE SENSING METHODS IN THE KALEYBAR AREA, NORTH-WESTERN REGION, ISLAMIC REPUBLIC OF IRAN

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Kaleybar area is located in Alborz-Azerbaijan zone northwest Iran, there is Cu-Fe-Au indices in this area; according to the earlier studies, this area can be considered for radioactive elements mineralization; also according mentioned study, radioactive anomalies are related to clay and silica Alterations, so these alterations can be used as a key to investigate other parts of Kaleybar area. In other side, remote sensing methods have made a good progress in detection and separation of alterations in recent years. Shortwave infrared (SWIR) bands from Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) with the wavelength between 1.65 and 2.43 μm has a good potential for mapping hydrothermal alteration minerals. In this study False Color Composite (FCC), Band Ratio (BR), Principle Component Analysis (PCA), Spectral Angel Mapper (SAM) methods where used to detect and separate Alterations. As result, 4 new areas where detected with clay alteration. After radiometry of these areas, 2 areas where identified as anomaly areas. Recent methods where used in this study and had good results for alterations detection and separation in Kaleybar area. These methods can be used as a key to research in similar areas.

Country or International Organization

Iran

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