

عنوان مقاله:

Assimilation model of Erosion and Soil Moisture Based on Remote sensing for Hydraulic and Hydrologic Integration of Taleghan Watershed

محل انتشار:

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خلاصه مقاله:

This research is focused on examining the challenges related to watershed management and data accessibility in the country, specifically concerning evaluating hydrological, water, and soil problems. The first part of the research involves using SWAT and GIS software to model the Taleghan watershed, analyzing sub-basins separately and in communication with each other. Key parameters such as sedimentation, erosion, soil moisture, and hydrological response have been investigated after modeling, calibration, validation, and uncertainty analysis and evaluated based on the region's formation and watershed parameter types. This approach can help identify potential issues and enable more effective management of the watershed. comprehensive study was conducted to investigate specific processes of the hydrological cycle in a particular basin including a detailed assessment of the balance and formations of the basin, as well as an examination of the influence of soil moisture and Curve number and sediment and erosion. The calibration was performed using the SUFI2 algorithm, which is commonly used for hydrological modeling. The precise delineation of the basin and sub-basin helped to create a high-precision communication model that accurately represents the system being studied. One key area of focus in this research was erosion potential and the hydrology process of soil moisture which was extensively investigated and mapped. Potential scenarios were also proposed for addressing erosion and soil moisture in the area. Finally, integration was achieved by calibrating sensitive parameters and combining runoff, erosion and sedimentation, soil moisture, and other relevant factors. This integrated model can be used in other areas with similar climatic conditions to predict productivity and integration. Overall, this study appears to have produced a practical and valuable model that could be useful for future research and land .management efforts

کلمات کلیدی:

assimilation model, soil moisture, erosion potential, remote sensing technology, integration

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