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nuclear activities using geospatial systems platforms

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Nuclear activity is a significant threat to the world peace. Monitoring such activities is important but in many cases it cannot be done in real time. Remote sensing and geospatial analysis play an important role in detecting the signatures resulting from these activities. These events leave impressive or disguised deep or superficial signatures on the environment, such as changes in the water table or in the surface water. Changes in the surface water can be monitored using data from multispectral imaging platforms. Image processing of non-homogeneity data, for instance, may result in errors caused by noise coming from surface signals and the error introduced by atmospheric effects can results in incorrect interpretation. Detecting water changes in satellite imagery is not an easy process because it depends on the human ability to accurately delineate water bodies. It can be achieved by digitizing manually or by extracting features automatically using a number of computational algorithms. Automatic feature extraction can produce faster results but it may mislead the interpretation because some features may occur naturally and not as the result of nuclear activity. Although image processing can provide some accurate results, it needs to be validated using other techniques to detect nuclear signatures.

Promotional text

It aims to discern how RS can contribute to the monitoring nuclear activity. Understand how effective and efficient some techniques perform is crucial for the response process. The quality of the data and the equipment available are important to assess and monitor such events.

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