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IAF EARTH OBSERVATION SYMPOSIUM (B1)
Assessing and Mitigating the Global Freshwater Crisis (6)

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A METHOD OF PREVENTING THE POLLUTION OF THE CASPIAN SEA, WHICH IS BEING POLLUTED, THROUGH THE APPLICATION OF THE SAR SYSTEM

Abstract

As time passes, the world's population continues to increase, leading to a myriad of problems. The rising population results in increased demand for fresh water, which in turn leads to pollution and depletion of water resources. Today, oceans and seas are constantly becoming polluted due to various reasons, with one of the main causes being contamination of water bodies during oil extraction. The pollution of water bodies, a major problem for the world, will pose a significant global challenge in the future, as the existence of life without water is not feasible. exposing society to serious obstacles. This will expose the society to serious obstacles Numerous measures have been taken to prevent water pollution. However, these efforts have yet to yield the expected results. To address this increasingly pressing issue, large-scale measures must be taken. For example, consider the pollution of the Caspian Sea. In recent years, the Caspian Sea has faced degradation due to biological and anthropogenic factors. Oil extraction in the Caspian Sea has resulted in significant harm to its cleanliness, posing risks not only to its pollution but also to the lives of many species of animals. Satellite imagery plays a crucial role in addressing the pollution of Caspian sea. Satellite imagery, combined with data from oil extraction sites, plays an invaluable role in identifying pollution zones. Therefore, to address the pollution in the Caspian Sea, from Synthetic Aperture Radar (SAR) systems is used to study the pollution occurring in the sea. The SAR system is one of the continuously developing systems worldwide. With its short revisit time and high spatial resolution, SAR provides the capability to obtain synoptic maps of observed areas. We can even cite the names of the Mediterranean Sea and the Gulf of Mexico as the most important evidence. SAR technology has been used in the Mediterranean Sea to detect oil spills from sea platforms, ships, and other sources, monitoring industrial activities, maritime transportation, and urban runoff. Likewise, SAR satellites have been deployed in the Gulf of Mexico to monitor ship accidents and oil spills resulting from drilling operations. Early detection of spills allows for swift action to prevent further pollution. All this shows that detection of the pollution zone by means of the Synthetic Aperture Radar (SAR) system in the Caspian Sea and the immediate initiation of measures will greatly prevent further pollution.