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Tools and Technology in Support of Integrated Applications (1)

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LEVERAGING EARTH OBSERVATION DATA FOR MITIGATING THE ADVERSE EFFECTS OF
GLOBAL WARMING AND CLIMATE CHANGE - PREDICTING THE RAPID MELTING OF SEA
ICE AND GLACIERS.

Abstract

Global warming and climate change are potential threats to the Earth's biological systems. One of the most significant impacts of climate change is the rise in sea level, which can cause inundation of coastal areas and islands, destruction of wetlands and mangroves. Additionally, changes to near-surface air temperatures influence ecosystem functioning and thus the biodiversity of plants, animals, and other forms of life.

The sea ice and glaciers contribute largely to the distortion of the global climate. The existing knowledge revealed that the Arctic is warming twice as fast as anywhere on earth, and the sea ice there is declining by more than 10

While we cannot prevent this natural occurrence, however, the disaster that comes with it can be mitigated. This presentation proposes the use of remote sensing/earth observation data (including altimeter radar measurements of sea level on a global basis, combined with satellite images of sea ice and glaciers over time) to develop a machine learning algorithm (instead of the traditional theoretical models) that will accurately predict the rate at which the sea ice and glaciers melts. Knowing the possibilities of disastrous events before they happen will help make proper preparations needed to mitigate the loss of lives and billions worth of resources. Furthermore, we will ultimately make our planet become more climate-resilient.