Paper ID: 77747
oral

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

Author: Mr. Sapar Satayev
China HEAD Aerospace Technology Co., France, saparsatayev@head-aerospace.fr

Dr. Wei Sun
China HEAD Aerospace Technology Co., France, admin@head-aerospace.fr
Mrs. lynn zhai
China HEAD Aerospace Technology Co., France, lynn@head-aerospace.fr

# CASE STUDY ON HOW TO USE HR SATELLITE IMAGERY TO MONITOR FRESHWATER

**Abstract**

The global freshwater crisis is becoming increasingly critical as the world's population continues to grow and the demand for freshwater increases. It is a complex and pressing issue requiring a multi-faceted and integrated approach. To assess and mitigate the global freshwater crisis, this paper will introduce how to use remote sensing images to protect the existing available freshwater.

At present, high spatial resolution remote sensing images can be used for accurate freshwater monitoring and water quality evaluation. Multiple Jilin 1 optical satellites with the highest spatial resolution of 0.3m can be used to accurately extract the freshwater boundary and obtain the accurate freshwater area; multispectral images with a spatial resolution of 5m can improve the accuracy of water quality health monitoring. Using the multi-temporal image data to obtain the periodic regular pattern of fresh water and analyse the potential pollution sources around the water area according to the land type. The treatment and restoration of polluted water bodies can be assisted effectively by identifying the species of aquatic plants. Experiments have been carried out in many places such as Tai Lake, and Chao Lake and good results have been obtained, which proves that high-resolution satellite imagery can play an important role in freshwater quantity estimation and water quality assessment. Overall, remote-sensing images can provide valuable information for decision-makers to develop strategies for protecting existing available freshwater resources.