

IAF SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)  
Interactive Presentations - IAF SYMPOSIUM ON INTEGRATED APPLICATIONS (IPB)

Author: Ms. Jocelyn Song  
China

Mr. Lifan Yao  
Beihang University (BUAA), China

AI EMPOWERS THE APPLICATION AND EXPLORATION OF COMMERCIAL REMOTE SENSING  
SATELLITES IN THE FIELD OF NATURAL RESOURCE MONITORING

**Abstract**

With the rapid development of artificial intelligence (AI) technology, its application in commercial remote sensing satellite data processing and analysis has brought profound changes to the field of natural resource monitoring. AI technology provides efficient methods for processing and analyzing large amounts of remote sensing data, greatly improving the accuracy and efficiency of natural resource monitoring. This article summarizes the research progress of domestic and foreign scholars on the application of AI-enabled commercial remote sensing satellites, explores the application scenarios of how AI can empower commercial remote sensing satellites in the field of natural resource monitoring, and focuses on analyzing the improvement of data processing efficiency and pattern recognition capabilities of AI technology. Contributions to enhancement and decision support system optimization. At the same time, through typical case studies such as land resources monitoring, forestry pest and disease monitoring, and forest fire prevention, the specific solutions and implementation effects of AI-empowered commercial remote sensing satellites in actual natural resource monitoring scenarios are described in detail. Finally, this article also discusses the challenges existing in current applications in data acquisition, algorithm development, interdisciplinary cooperation, and technology implementation, and looks forward to the future development trend of AI-enabled commercial remote sensing satellites in the field of natural resource monitoring in order to promote the sustainable and innovative development of commercial remote sensing satellite applications in the field of natural resource monitoring.