

EARTH OBSERVATION SYMPOSIUM (B1)
Biodiversity (6)

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INVESTIGATION ON MONITORING AND REPORTING FOREST FIRES IN ASIA

Abstract

Natural forest fires and those from farmlands are major sources of significant air pollution. Forest fires are the second-largest source of PM_{2.5} (Particulate Matter 2.5 micrometer) from wood smoke (second to open-burning/farmland sources). They can have significant impacts on local air quality, visibility and human health. Emissions from forest fires can travel large distances, affecting air quality and human health even in farther areas. These can well be considered as non-conventional sources, which certainly deserves dedicated efforts for monitoring and control. Many efforts have been made to reduce the impact of this pollution source through local government initiatives and awareness drives, and monitoring the distribution of harmful pollutants via satellite technology. A fresh investigation has been launched to understand the different perspectives which result in fires in the first place, comprising of its causes, time of year with increased frequency, dependency on geography, and its effects on society. Development of the satellite sensor technology is critical and its capabilities continues to evolve to more accurately to monitor and estimate levels of pollutants and types of pollutants, and through thermal detection of fire locations as hotspots. The study discusses the currently ongoing and prospective space applications, with possible improvements, in future from the perspective of forest fire and agricultural fire monitoring, including haze and cloud detection, by integrating and utilisation of earth observation satellites. The requirements, efforts and challenges of emerging space economies is also discussed. The study also provides a set of recommendations as governmental priorities for implementing a nation-specific systems capable of reporting annual carbon emissions from wildfires, together with institutional and public awareness of space applications, and thus promoting the sustainable development of forests and the competitiveness of the forest sectors.