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RESEARCH ON DEVELOPMENT OF REMOTE SENSING EARTH OBSERVATION

Abstract

The conception of Digital Earth has been accepted by more and more countries today. Fast progress in the field of earth observation technology makes for space time image become most important data source for Digital Earth. Understand and analyzing global environmental condition is an essential element of guaranteeing our safety and quality of life. Among other things, we need to be able to spot environmental disasters in a timely manner and to monitor and manage the earth's natural resources. During the recent decades, along as the maturation of the satellite payload theory and its great advantages in remote sensing, the earth observation technique has rapid developed. Many countries have launched a number of earth observation satellites, for the benefit of the everyday lives, weather forecasts, disaster monitoring, exploitation of natural resources, and environmental protection of forestry and fishery. The development of remote sensing earth observation technology in the world is discussed. The TRMM satellite, a joint project between Japan and the United satellite, have brought us new information on rainfall. Research conducted by the TRMM is expected to lead to further development of more advanced earth observation equipment in the near further. AQUA was developed as a joint project by the United States, Japan and Brazil, launched in May, 2002. It is an earth observation satellite that monitors from space various kinds of physical phenomena related to water and energy circulation. The achievement of the earth observation technique in china is also discussed in the paper. Depending on the development in the world for remote sensing, earth observation technique in 21th century is expounded from five aspects : (1) Development from single-mode to multi-mode; (2) Transformation from low integration to high integration; (3) Extension from single-function to multi-function; (4) Programmable and network –base controllable monitoring; (5) Combines military with civilian, applied military on civilian. Remote sensing earth observation technology will play amore and more important role in obtaining the space-time information in the earth surface and its depth, and it will create the indispensable condition for human beings comprehensively, systematically, in depth studying the earth on which we rely for existence.