

# 《文化遗产的数字化保护》

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## 前言

Cultural heritages include rich information related to social, historical and cultural values. Affected by climate, environmental and other factors, some valuable heritage information is threatened through destruction or disappearance, and some is still not utilized sufficiently. How to investigate and utilize such information effectively is a significant scientific and technological issue. Archaeologists, museologists and conservators are working on issues such as the excavation of precious heritage items, the exhibiting of this valuable information and the strengthening of their outline structure, which aims to conserve and utilize the heritage items as well as their values. The development of information technology has shown its significant role in large and fast digitalization, personalization and so on. Information technology is more and more important in heritage preservation, including, but not limited to, digitalization, digitally-aided research, conservation, exhibition and utilization. First introduced in the 1980s, information technology was initially used to store information about relics, and then some digitalization and exhibition applications were implemented. Currently, information technology is applied in many different aspects in heritage information preservation.

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## 内容概要

《文化遗产的数字化保护:技术与应用(英文版)》内容简介 : Digital Preservation for Heritages Technologies and Applications provides a comprehensive and up-to-date coverage of digital technologies in the area of cultural heritage preservation, including digitalization, research aiding, conservation aiding, digital exhibition, and digital utilization. Processes, technical frameworks, key technologies, as well as typical systems and applications are discussed in the book. It is intended for researchers and students in the fields of computer science and technology, museology, and archaeology.

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## 章节摘录

插图：Developed in 1960s, RS has its broad sense and narrow sense. In a broad sense, it is a detection technology that remotely senses objects and natural phenomena using electromagnetic waves, gravitational fields, electric fields, mechanical waves ( sound waves, seismic waves ) , and so on, without direct contact. In a narrow sense, it is a technology that is used to study the shapes, sizes, locations, and properties of objects on the earth and their correlations with the environment. The radiation features of electromagnetic waves, from ultraviolet to microwave, of various objects on the earth are obtained using various sensors placed on aerospace carriers ( including near-earth carriers ) at different heights. Those features are then formed into images, which are then transmitted and processed. Through such procedures, the attributes of objects on the earth are identified, and their temporal and spatial changing rules are explored. Multi-sensors, high-resolution, and multi-temporal data are the distinctive features of contemporary development of RS technology. The application and analysis of RS information is currently undergoing a number of changes from the analysis of single remote sensing data to the analysis of fused information from multiple data sources, from static analysis to dynamic monitoring analysis, from qualitative investigation to computer-aided automatic quantitative investigation. Aerial RS has become an important aspect of RS development for the reason of its mobility and high-resolution. RS archaeology, as its name suggests, is the nondestructive detection of objects on the ground, underground, or underwater using RS technology. To be specific, we detect, record, and analyze archaeological sites and their regional environments from four levels, namely aerospace, aviation, ground and underground, using geophysical means such as electromagnetic and seismic waves, and gravitational, magnetic, and electric fields. Using RS archaeology, the information obtained is no longer limited by visible light and audible sound waves detected by human eyes and ears. Any trivial changes or abnormalities in attributes detectable by the instruments can be recorded; therefore, RS technology can provide much more detailed archaeological information.

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