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Nota di contenuto	INTRODUCTION -- MANAGEMENT OF CULTURAL HERITAGE -- GEOPHYSICAL METHODS -- Electrical resistivity tomography (ERT) -- Ground high resolution penetrating radar (GPR) -- Differential magnetic method -- Electromagnetic method -- CASE HISTORIES: APPLICATIONS OF GEOPHYSICAL PROSPECTION TO CULTURAL HERITAGE -- Monuments -- Historical buildings -- Urban centre -- Archaeological parks -- Preventive archaeology -- Ancient viability -- Integration of 3D metric survey and geophysical prospections -- Geographical Information Systems implemented with geophysical prospections.
Sommario/riassunto	This book provides information and tools necessary to bridge and integrate the knowledge gaps related to the acquisition and processing of archaeological data, specifically in the field of preventive diagnostics, urban centers, archaeological parks and historical monuments, through activities that involve the application of non-invasive diagnostic detection systems, in the field of applied

geophysics. The principal aim of this book is to define a tool for experts that work in the frame of Cultural Heritage and to identify a procedure of intervention transferable and usable in different geographical contexts and areas of investigations: it could help to decide the better technique of investigation to apply in relation to the predictive characteristics of the archaeological site and the objectives of the survey. The book is divided in two parts. The first one explains the theory of ground high resolution penetrating radar (GPR), electrical resistivity tomography (ERT), controlled source electromagnetism system, differential magnetic method and the scenario of integrated methods of different geophysical techniques. Each section covers the basic theory (complete description of the physical parameters involved in the method), field instruments (description of all systems actually offered by commercial companies), field techniques (presentation of the main procedures and setting parameters used to explore the ground surface during data acquisition), techniques of data processing and representation (main processing routines and comparison between different techniques; presentation of different typologies of graphical representation), and the possibility and limitations of methods (explanation of best and worst conditions of implementation of the geophysical technique in relation to the contrasts between archaeological features and the natural background and the features of the instruments and arrays). The second part describes some applications of geophysical prospection to Cultural Heritage in detailed case histories, divided in sections relative to monuments, historical buildings, urban centres, archaeological parks and ancient viability. Moreover, examples of integration of three-dimensional reliefs and geophysical diagnostic of a monuments and studies of large scale reconnaissance implemented into a Geographical Information System are treated. In each case study the authors cover the description of the archaeological or historical contest; an explanation of the problem to solve; a choice of the geophysical methods; the setting of the procedure of data acquisition; techniques of data processing; a representation, interpretation, and discussion of the results.
