Book Review

'Archaeogeophysics, State of the Art Case Studies' by Gad El-Qady and Mohamed Metwaly, Springer, Natural Science in Archaeology, 2019; ISBN: 978-3-319-78860-9, ISBN (e-book): 978-3-319-78861-6

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Over the last 30 years geophysical methods became a crucial part of the archaeological survey. A wide range of methods, suitable for different targets and environments, provide complementary information and often are integrated to improve the resolution and reduce the uncertainty of the results. The editors of this book, Gad El-Qady and Mohamed Metwaly and the contributing authors, created a treatise which presents real life examples of the most commonly used geophysical methods in archaeology. The book is composed of fourteen chapters, contributed by different authors, relating to separate case studies.

This book starts with an introductory chapter that describes briefly the most common methods used in archaeological research. Although many of the following chapters include a small introduction to the methods used in each case, this introductory chapter is useful for readers that are not familiar with the geophysical techniques. The following chapters are self-contained case studies from different parts of the world including, Egypt, Hungary, Turkey, China, New Zealand and Portugal. Some chapters focus in the integration of several overlapping geophysical methods focusing on the challenges of the joint interpretation and the suitability of each method in different cases (chapters 2, 4, 6, 11 and 13). Certain chapters are focused on some less common techniques such as the application of tensorial electrical resistivity mapping (chapter 3), the standardized pricking probe surveying (chapter 10) and horizontal

loop electromagnetic directionality survey (chapter 11). Other chapters are focused in technical issues such as the ground penetrating radar resolution (chapter 9). Chapter 8 presents general framework and case studies on how different geophysical models integrate with archaeological research and can shed light to particular questions. Chapters 5 and 7, focus on the application of geophysical methods in Portugal and Egypt, respectively. Chapter 12 discusses a very interesting application of geophysical techniques in the assessment and mitigation of degraded archaeological sites. Finally, the book ends with a chapter presenting the basic concepts of a monument conservation plan and discussing methods such as optical, polarized and scanning electron microscope investigations and the X-ray diffraction method.

Overall, this 276-page book is well balanced, containing a great variety of the most commonly used and state of the art geophysical methods in archaeology. Through many case studies, it presents the advantages and disadvantages of each method as they are established in real applications. Following, it discusses the challenges and the benefits of the integration of different geophysical models as they were addressed from various research groups in dissimilar archaeological problems. It is rich in explanatory figures, many of them in colour that help the reader to conceive the presented material. This book is an excellent read for archaeologists, geophysicists and students of these disciplines.

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