Peer reviewed articles in international journals (included in Web of Science)

(1) **Verdonck, L.**, A. Launaro, F. Vermeulen, and M. Millett. "Ground-penetrating radar survey at Falerii Novi: a new approach to the study of Roman cities" *ANTIQUITY* 94 (2020): 705–723. Open access: https://doi.org/10.15184/aqy.2020.82. GPR survey at the Roman town Falerii Novi (the first complete survey of a Roman town): review of the methods and overview of the results, demonstrating how the survey of large urban sites challenges current methods of analysis and publication.

(2) **Verdonck, L.**. "Detection of Buried Roman Wall Remains in Ground-penetrating Radar Data Using Template Matching." *ARCHAEOLOGICAL PROSPECTION* 23.4 (2016): 257–272. Open access: https://tinyurl.com/ya7u6nn6. This paper shows the advantages of template matching-based extraction of buried linear structures such as wall foundations, over traditional techniques. The technique detected ~75 % of the structures identified through manual interpretation.

(3) **Verdonck, L.**, D. Taelman, F. Vermeulen, and R. Docter. "The Impact of Spatial Sampling and Migration on the Interpretation of Complex Archaeological Ground-penetrating Radar Data." *ARCHAEOLOGICAL PROSPECTION* 22.2 (2015): 91–103. Open access: https://tinyurl.com/24krdj2r. This paper presents an objective way of determining the maximum sample interval in GPR surveys, to take full advantage of the capability of the technique. The positive effect of 3-D migration processing is also demonstrated.

(4) Saey, T., S. Delefortrie, **L. Verdonck**, Ph. De Smedt, and M. Van Meirvenne. "Integrating EMI and GPR Data to Enhance the Three-dimensional Reconstruction of a Circular Ditch System." *JOURNAL OF APPLIED GEOPHYSICS* 101 (2014): 42–50. It is shown for the first time how integration of GPR and electromagnetic induction data allows to calibrate the speed of the GPR waves and the conductivity of the different layers, resulting in a better interpretation of archaeological and geomorphological data.

(5) **Verdonck, L.**, F. Vermeulen, R. Docter, C. Meyer, and R. Kniess. "2D and 3D Ground-penetrating Radar Surveys with a Modular System: Data Processing Strategies and Results from Archaeological Field Tests." Ed. Jan van der Kruk, Evert Slob, & Lorenzo Crocco. *NEAR SURFACE GEOPHYSICS* 11.2 (2013): 239–252. Open access: https://tinyurl.com/2pvbfywt. A novel modular GPR system is presented (i.e. the use of several single antennas in parallel), the required positioning accuracy is discussed and solutions for striping in the horizontal slices are proposed.

(6) **Verdonck, L.**, F. Vermeulen, C. Corsi, and R. Docter. "Ground-penetrating Radar Survey at the Roman Town of Mariana (Corsica), Complemented with Fluxgate Gradiometer Data and Old and Recent Excavation Results." *NEAR SURFACE GEOPHYSICS* 10.1 (2012): 35–45. Open access: https://tinyurl.com/arxu3b3u. The GPR survey at Mariana revealed parts of the early Imperial centre, completely unknown until then, which mainly consists of private houses, often with different occupation phases. The survey allowed locating several old excavations.

(7) **Verdonck, L.**, D. Simpson, W. Cornelis, A. Plyson, J. Bourgeois, R. Docter, and M. Van Meirvenne. "Ground-penetrating Radar Survey over Bronze Age Circular Monuments on a Sandy Soil, Complemented with Electromagnetic Induction and Fluxgate Gradiometer Data." Ed. M. Ciminale, R. Lasaponara, & S. Piro. *ARCHAEOLOGICAL PROSPECTION* 16.3 (2009): 193–202. Open access: https://tinyurl.com/2mw272fr. This paper presents a GPR survey over two circular ditches surrounding Bronze Age burial mounds at Koekelare (Belgium). Their depth was estimated with migration velocity analysis and time domain reflectometry, and compared with augering results.

(8) Simpson, D., A. Lehouck, **L. Verdonck**, H. Vermeersch, M. Van Meirvenne, Jean Bourgeois, Erik Thoen, and R. Docter. "Comparison Between Electromagnetic Induction and Fluxgate Gradiometer Measurements on the Buried Remains of a 17th Century Castle." *JOURNAL OF APPLIED GEOPHYSICS* 68.2 (2009): 294–300. Different configurations of an electromagnetic induction (EMI) sensor were evaluated and compared with fluxgate gradiometer measurements. The gradiometer anomalies were sharper, but also showed a more complicated response.

Peer reviewed articles in international journals (not included in Web of Science)

(9) Verhoeven, G., F. Vermeulen, D. Taelman, and **L. Verdonck**. "Taking vegetation marks into the next dimension. Mapping the hilltop settlement of Montarice (central Adriatic Italy) by a multi-dimensional analysis of aerial imagery." *ARCHEOLOGIA AEREA* 11 (2017): 165–170. Open access:

https://tinyurl.com/yayzr42r. The potential of state-of-the-art image-based modelling (IBM) techniques is explored to create high-resolution orthophotographs from analogue images acquired at Montarice Hill, Marche, Italy.

(10) Vella, N., A. Bonanno, M. Anastasi, B. Bechtold, R. Farrugia, K. Fenech, D. Mizzi, **L. Verdonck**, and A. Zammit. "A View from the Countryside. The Nature of the Late Punic and Early Roman Activity at the Zejtun Villa Site, Malta." *RIVISTA DI STUDI FENICI* 45 (2017): 109–143. Print. The excavations and the GPR prospection at the Roman villa in Żejtun throw new light on rural Malta and on the transition between the Punic and Roman periods.

Book chapters

(11) **Verdonck, L.,** A. Launaro and M. Millett. "The urban survey: methodology." *Interamna Lirenas. A Roman town in Central Italy revealed.* Ed. A. Launaro & M. Millett. Cambridge: McDonald Institute Monographs, 2023. 19–37. Open access: https://doi.org/10.17863/CAM.99667. Overview of the methodology of the geophysical surveys carried out at the Roman town Interamna Lirenas (Italy), with the emphasis on the GPR survey.

(12) Launaro, A., M. Millett, **L. Verdonck**, and F. Vermeulen, "Ground-penetrating radar survey as the linchpin of a multidisciplinary approach to the study of two Roman cities in Lazio." *Non-intrusive methodologies for large area urban research.* Ed. I.P. Haynes et al. Oxford: Archaeopress Publishing Ltd., 2023, 74–80. Open access: https://www.archaeopress.com/Archaeopress/download/9781803274461. Review of the GPR method as it was deployed at the Roman towns Interamna Lirenas and Falerii Novi, and overview of the results (with detailed descriptions of the outcomes in some particular areas in both towns).

(13) **Verdonck, L.**, M. Praet, R. Docter, R. Laffineur, A. De Wulf, and C. Stal. "Geophysical, topographical, and remote sensing investigations on the Velatouri Hill at Thorikos (2006-2014)." *Thorikos: Reports and Studies XII*. Ed. R. Docter & M. Webster. Vol. 12. Leuven: Peeters, 2021. 81–98. Overview of the prospection activities carried out at Thorikos (Greece), including the GPR survey which detected part of the 5th century BC defense system.

(14) **Verdonck, L.**, Ph. De Smedt, and J. Verhegge. "Making Sense of Anomalies : Practices and Challenges in the Archaeological Interpretation of Geophysical Data." *Innovation in Near-surface Geophysics : Instrumentation, Application, and Data Processing Methods*. Ed. R. Persico, S. Piro, & N. Linford. Amsterdam, The Netherlands: Elsevier, 2019. 151–194. Different directions are proposed to facilitate the interpretation of geophysical data in archaeology, e.g. careful data acquisition and processing, data combination, and computer-aided interpretation.

(15) Van Limbergen, D., F. Vermeulen, G. Verhoeven, and **L. Verdonck**. "Methodological Approach." *The Potenza Valley Survey (Marche, Italy) : Settlement Dynamics and Changing Material Culture in an Adriatic Valley Between Iron Age and Late Antiquity*. Ed. F. Vermeulen et al. Vol. 1. Rome: E.S.S. Editorial Service System Srl, 2017. 10–41. This chapter discusses the methodology the Potenza Valley Survey has adopted since 2000, which includes different kinds of geophysical survey (magnetometry, electrical resistivity imaging, GPR).

(16) **Verdonck, L.**. "Fluxgate Gradiometer and GPR Survey to Locate and Characterize the Perimeter, Early Imperial Centre and Street Network of the Roman Town Mariana (Corsica)." *Archaeological Survey and the City*. Ed. P. Johnson & M. Millett. Vol. 2. Oxford, UK: Oxbow Books, 2013. 241–260. Open access: https://tinyurl.com/3hwunnc9. Combined interpretation of the magnetometer and GPR prospections at Mariana; results of a test excavation which revealed different phases of a public building.

(17) **Verdonck, L.**, and D. Taelman. "Ground Penetrating Radar Survey at Ammaia." *Ammaia I : the Survey : a Roman-Lusitanian Townscape Revealed*. Ed. C. Corsi & F. Vermeulen. Vol. 8. Ghent, Belgium: Academia Press, 2012. 69–81. Open access: https://tinyurl.com/vzd2rrj6. This chapter describes the GPR surveys conducted between 2008 and 2011 at the Roman town Ammaia (Portugal). Data acquisition and processing, results and archaeological interpretation are discussed.

Peer reviewed papers in international conference proceedings

(18) **Verdonck, L.**, and Adeline Hoffelinck, "Ground-penetrating radar survey of the area to the south of the Schola del Traiano (IV, V, 15-16) at Ostia." *Ad Ostium Tiberis. Proceedings of the Conference 'Richerche Archeologiche alle Foce del Tevere' (Rome–Ostia, December 2018)*. Ed. G. Mainet and M.S. Graziano. Leuven: Peeters, 2022. 79–90. This GPR survey at Ostia detected structures near the *Schola del Traiano*, but it is difficult to draw conclusions on their function. The existence of *tabernae* and a street was confirmed.

(19) **Verdonck, L.**, F. Vermeulen, M. Millett, and A. Launaro. "The Impact of High Resolution Ground-Penetrating Radar Survey on Understanding Roman Towns: Case Studies from Falerii Novi and Interamna Lirenas (Lazio, Italy)." *Proceedings of the 2018 IEEE International Conference on Metrology for Archaeology and Cultural Heritage*. Cassino, 2018. 249–254. Open access: https://doi.org/10.17863/CAM.36280. It is described how a dense sampling strategy, advanced data processing, centimeter-precise positioning, and the combination of magnetometer and GPR data contributed to the understanding of these two Roman towns, and Roman urbanism in Italy.

(20) Mac Thi, Thoa, Cosmin Copot, **L. Verdonck**, and Robin De Keyser. "Speed Control Strategy of Geophysical Measurement Platform for Archaeological Prospection : Conceptual Study." *2016 IEEE INTERNATIONAL CONFERENCE ON SYSTEMS, MAN, AND CYBERNETICS (SMC)*. 2016. 3748–3753. This paper presents a conceptual study for speed control of an autonomous geophysical measurement platform (robot towing a cart with geophysical sensors) for archaeological prospection on challenging terrain.

(21) **Verdonck, L.**, Ernie Haerinck, and Bruno Overlaet. "GPR Survey to Explore Social Stratification in a pre-Islamic Burial Area at Mleiha, Sharjah (United Arab Emirates)." *PROCEEDINGS OF THE 2014 15TH INTERNATIONAL CONFERENCE ON GROUND PENETRATING RADAR (GPR 2014)*. Ed. S Lambot et al., 2014. 2–7. This paper presents a GPR survey to explore a necropolis near the eastern border of the site of Mleiha (United Arab Emirates). Several square tomb-towers were detected. All have marks that they have been plundered.

(22) **Verdonck, L.**, and F. Vermeulen. "3-D GPR Survey with a Modular System: Reducing Positioning Inaccuracies and Linear Noise." *Archaeological Prospections*. Ed. Mahmut G Drahor & Meriç Berge. Istanbul: Archaeology and Art Publications, 2011. 204–212. Positioning accuracy and solutions for striping in the horizontal slices when using a modular GPR system, are discussed.