

ROBERTO GIOVANNI FRANCESE (*), ALDINO BONDESAN(**), CARLO BARONI(***),
MARIA CRISTINA SALVATORE(***), MASSIMO GIORGI(****), SIMONE LANDI (***),
CRISTINA BASSI (*****), NICOLA CAPPELLOZZA (*****), ELISABETTA MOTTES (*****),
FRANCO NICOLIS (*****) & MAURIZIO VICENZI (*****)

GPR AND SEISMIC SURVEYING IN THE WORLD WAR I SCENARIO OF PUNTA LINKE (ORTLES-CEVEDALE GROUP, ITALIAN ALPS)

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R. Francese, A. Bondesan, C. Baroni, M.C. Salvatore, M. Giorgi and S. Landi planned, conducted and interpreted the geophysical GPR surveys, C. Bassi, N. Cappelozza, E. Mottes and F. Nicolis conducted the archaeological research on the Punta Linke site, F. Nicolis and M. Vicenzi coordinated the Punta Linke Project.

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(*) Dipartimento di Fisica e di Scienze della Terra “Macedonio Melloni”, Università di Parma, Parco Area delle Scienze, 7/A, 43124 Parma, Italy, roberto.francese@unipr.it

(**) Dipartimento di Geoscienze, Università di Padova, Via Gradenigo 6, 35121 Padova, Italy, aldino.bondesan@unipd.it

(***) Dipartimento di Scienze della Terra, Università di Pisa, Via S. Maria 53, 56126 Pisa, Italy, carlo.baroni@unipi.it; mariacristina.salvatore@unipi.it

(****) Istituto Nazionale di Oceanografia e di Geofisica Sperimentale di Trieste - OGS, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS, Borgo Grotta Gigante, 42/c, 34130 Sgonico (TS), Italy, mgiorgi@inogs.it

(*****) Soprintendenza per i Beni Culturali, Ufficio Beni archeologici, Provincia Autonoma di Trento, Via Mantova 67, 38122, Trento, Italy, franco.nicolis@provincia.tn.it; elisabetta.mottes@provincia.tn.it; cristina.bassi@provincia.tn.it

(******) SAP Società Archeologica, Via Fienili 39/a, 46020 Quingentole, Mantova Italy

(******) Museo “Pejo 1914-1918. La Guerra sulla Porta”, Salita S. Rocco 1, 38024 Pejo, Trento, Italy, museopejo@virgilio.it

Corresponding author: M.C. Salvatore (mariacristina.salvatore@unipi.it)

ABSTRACT: FRANCESE R., BONDESAN A., BARONI C., SALVATORE M.C., GIORGI M., LANDI S., BASSI C., CAPPELLOZZA N., MOTTES E., NICOLIS F. & VICENZI M., *GPR and Seismic surveying in the World War I Scenario of Punta Linke (Ortles-Cevedale Group, Italian Alps)*. (IT ISSN 0391-9838, 2015).

The Ortles-Cevedale Group was the setting of repeated clashes occurring under extreme conditions and at the highest altitudes of all fightings in the Great War (WWI). The research scenario associated with the group is very challenging because modern research faces a series of logistical and climatic obstacles. The gradual retreat of glaciers has unearthed several archaeological remains of WWI such as barracks, barbed wire, military ammunition, weapons and other materials. The study site is the saddle between M. Vioz and Punta Linke, where the Historic War Museum of Pejo, under the direction of the Archaeological Service of the Province of Trento (Soprintendenza per i Beni Culturali, Ufficio Beni Archeologici), started an archaeological excavation in the year 2009 of some of the infrastructure of the cableway station, which also includes a tunnel section in the bedrock.

The saddle is placed at the head of Forni Glacier. GPR and seismic imaging was the best survey choice to characterize the glaciological and geo-archaeological context and to find structures or remains within the ice mass. Geophysical imaging spanned two campaigns in the years 2010 and 2011. The ice-rock interface was reconstructed in detail to depths greater than 45-50 m. The surface of the bedrock reveals a complex morphology, with several undulations and two rocky ridges elongated in the NNW-SSE direction. They identified some anomalous reflectors within the ice mass located near the western edge of the saddle of Punta Linke. The interpretation of radar profiles seems to indicate the presence of a tunnel in the ice, whose geometry and position is similar to others excavated in alpine glaciers during the Great War.

KEY WORDS: GPR survey, Punta Linke, Forni Glacier, Ortles-Cevedale Group, World War I

RIASSUNTO: FRANCESE R., BONDESAN A., BARONI C., SALVATORE M.C., GIORGI M., LANDI S., BASSI C., CAPPELLOZZA N., MOTTES E., NICOLIS F. & VICENZI M., *Indagini georadar e sismiche nel sito archeologico della Prima Guerra Mondiale di Punta Linke (Gruppo Ortles-Cevedale, Alpi)*. (IT ISSN 0391-9838, 2015).

Il Gruppo dell’Ortles-Cevedale nelle Alpi fu teatro di ripetuti scontri in alta quota durante la Grande Guerra. Il progressivo ritiro dei ghiacciai ha portato alla luce numerosi siti e resti della Prima Guerra (baracche, filo spinato, munizionamento bellico, armi e materiali). Tra il Monte Vioz e Punta Linke il Museo “Pejo 1914-1918. La Guerra sulla porta”, sotto la