

VERIFICA: PERFORMANCE ANALYSIS OF CONJUGATE GRADIENT (CG) APPLIED TO THE DETECTION OF BURIED OBJECTS WITH GPR DATA

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Abstract

In recent years, there has been a growing interest in the development of inverse scattering based imaging techniques for several diagnostic applications, ranging from non destructive evaluations to subsurface prospecting and medical imaging.

The imaging of buried objects is a challenging topic in electromagnetic research.

The aim of this project is to validate the performances coming from the application of a method (Conjugate Gradient) previously proposed for imaging of scatterers in free-space, when extended to the case of objects buried in a lossy half-space. In particular, the processing will be performed on synthetic data coming from a GPR (Ground Penetrating Radar) acquisition system.

Reference Bibliography: Inverse Scattering [1]-[9], Subsurface imaging [10].

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