

Public Abstract

First Name:Zhenhua

Middle Name:

Last Name:Ma

Adviser's First Name:Dominic K.C

Adviser's Last Name:Ho

Co-Adviser's First Name:

Co-Adviser's Last Name:

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Title:ADVANCED FEATURE BASED TECHNIQUES FOR LANDMINE DETECTION USING GROUND PENETRATING RADAR

Subsurface object detection is an important and yet challenging problem that remains to be solve. It is also a problem concerning the humanitarian. The goal of this research is to propose some signal processing techniques for subsurface object detection. Two techniques are developed in this research. One technique applies the clustering method that extracts the "hidden patterns" among signals from subsurface objects to improve their detection. The other technique is called subspace detector which uses a subspace to model the signal characteristics from subsurface objects. These techniques are tested in various data sets to evaluate their ability to improve the detection result. Both of them are proved to be useful in improving the detection of subsurface objects.