

透地雷達量測於混凝土內含不同鋼筋尺寸之研究

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摘要

Ground penetrating radar has been widely used in the measurement of civil construction component. Studies about its application in various aspects has been made by researchers both local and abroad. However, studies about its application in determination of the different sizes of structural steel within the concrete are still less popular. In the processing of data from ordinary ground penetrating radar, transformation of signal reflected by medium into digits can help improve the accuracy of interpreting cross sectional view and showing differences between images by comparison using traditional one. Such a method of determination is a kind of qualitative analysis and comparison. However, this study aims at determination of the different sizes of structural steel within the concrete on the basis of theory of propagation of electro-magnetic wave and digital image processing technology and is carried out by observation of the characteristic of signal reflected by medium and phenomenon of propagation of electro-magnetic wave to establish relationship between energy of signal reflected by medium, changes of wave form, geometry etc so as to enable determination of the different sizes of structural steel.

關鍵字：Ground Penetrating Radar, Electromagnetic Wave, Digital Numeric-Code Image, Reflection Signal