

Long Term and Fixed Point Measurement of Permittivity under Asphalt Paved Road Using TDR and GPR

*Jun Sonoda¹, Tatsuya Kunioka², Shin Takahashi², Toshiki Hosokawa²

1. National Institute of Technology, Sendai College, 2. MIRAIT Corporation

The ground penetrating radar (GPR) with several hundred MHz radio waves is widely used for non-destructive underground sensing. The GPR is useful for inspection of social infrastructures such as underground pipes and road cavities. In particular, damage accidents of buried pipes at construction sites have been a severe problem. It is necessary to know the dielectric constant under asphalt pavement road to estimate the depth of the buried pipes. However, there are no studies about direct and long term measurements for the dielectric constant under the road. In this study, we faithfully modeled an actual road construction site. And we have long time measured the permittivity using the time domain reflectometry (TDR) and the GPR in our site.

Keywords: Time Domain Reflectometry, Ground Penetrating Radar, Permittivity, Asphalt Paved Road

