GROUND-PENETRATING RADAR INVESTIGATION OF SUBSIDENCE IN COVERED KARST NEAR VALDOSTA

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We employed ground-penetrating radar (GPR) to investigate a house lot in a rural area west of Valdosta at which subsidence had occurred. Subsurface anomalies were identified in a 29 m x 51 m grid which abutted the house. Two other areas on the same property were also investigated to identify locations which had fewer subsurface anomalies and might be less prone to subsidence than the current house site. The land surface on the property is variably mantled by indurated sand at the top of the Hawthorne Group in the local geology. We collected samples of the local bedrock and overlying soil and sediments in order to constrain the velocity at which the radar pulse is transmitted and reflected in the subsurface. We will present maps of each area based upon "time slice" analysis of GPR data. The method shows promise for estimating the likelihood of subsidence in the Valdosta area.