Knowledge of the volume of water in soil pores is important for agricultural, environmental, and engineering applications. This article shows how a geophysical technique, ground penetrating radar, can be used to quickly and non-invasively measure soil water content over large areas and how these measurements can be used to better understand soil water content variability both laterally and vertically. The article also describes the geostatistical correlation of soil water content and soil texture and shows how geophysically-derived measurements of soil water content can be used to help estimate soil texture.

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