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Where did my wifi go? Measuring soil moisture using wifi signal strength

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Soil moisture is tricky to measure. Currently soil moisture is measured at small footprints using probes and other field devices, or at large footprints using satellites. Promising developments in measuring soil moisture are using fiber optic cables for measurements along a line, or using cosmos rays for field scale measurements. In this demonstration we present a low cost alternative to measure soil moisture at footprints of a few square meters. We use a wifi hotspot and a wifi dongle, both mounted in a cantenna for beam forming. We aim the hotspot on a piece of soil and put the dongle in the path of the reflection. By logging the signal strength of the wifi netwerk, we have a proxy for soil moisture. A first proof of concept is presented.