



Continuous measurement of soil-water characteristic curves at low suction levels

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The soil-water characteristic curve (SWCC) is an important piece of information for understanding unsaturated soil behavior. With few exceptions, most of the SWCCs are developed as discrete points and are typically generated under drying path. This study presents results from automated tests that typically draw suction values to about 1 bar. Tempe cells are used with the axis translation method to generate the curves. Soils tested include fine sand, silty, and clayey sands. While a typical test starts in a saturated state and generates a drying curve, the test can be reversed any number of times to produce hysteresis behavior. Another advantage to the method is time efficiency since a curve with thousands of data points are produced in less than a week. However, careful consideration has to be made with regard to extraction rate, especially as the specimen becomes dryer. Several data sets are presented illustrating good and problematic behavior as well as hysteresis. Some suggestions are given concerning the selection of extraction rates or adjusting curves to account for extraction rate effects.