(Supplementary Material) Improving Seasonally Frozen Ground Monitoring Using Soil Freezing Characteristic Curve in Permittivity-Temperature Space

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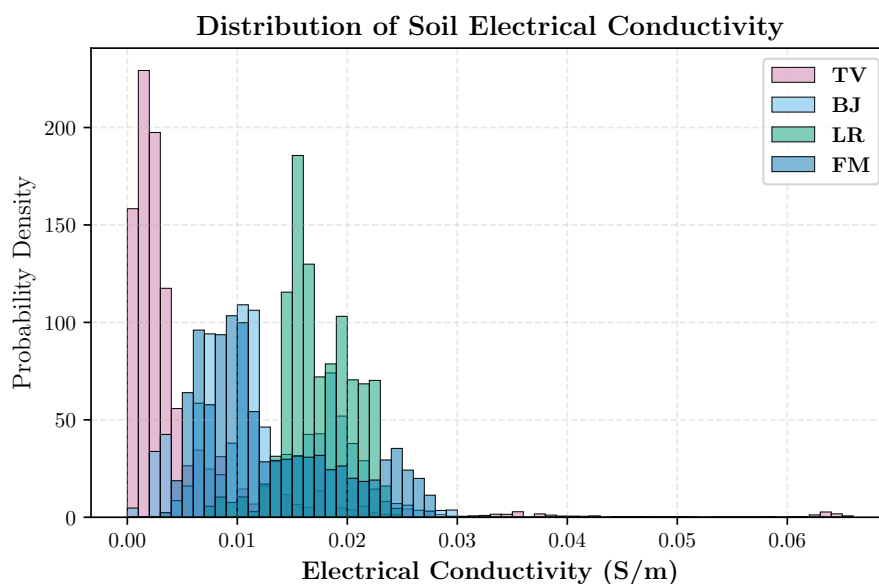**Correspondence:** Hesam Salmabadi (hesam.salmabadi@uqtr.ca)

Figure S1. Histogram of electrical conductivity (EC) values measured at Trail Valley Creek (TV), James Bay (BJ), La Romaine (LR), and Montmorency Forest (FM) sites.
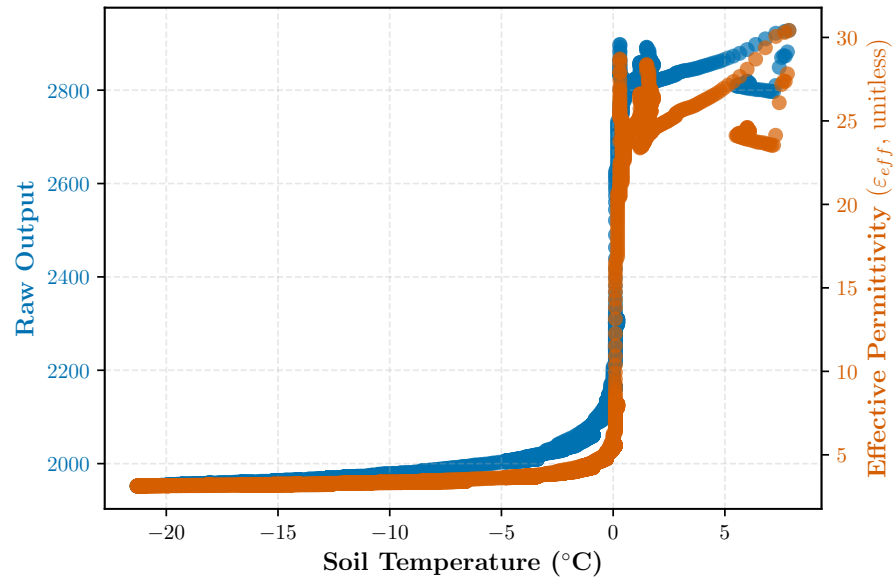
Figure S2. Soil Freezing Characteristic Curve (SFCC) visualized in both sensor raw output–temperature space and permittivity–temperature space. These representations highlight the freezing transition as captured directly by the sensor output and after conversion to effective permittivity.