EMI Methods for Mapping Soil Characteristics Quiz

1. Given that you have a field that is 300m wide and 500m long, the field has furrows that are with the 500m length and want to perform 10 transects over the entire field, calculate the space from the edge of the field needed to avoid potential edge bias. Additionally, draw how this transect survey would look like on the diagram below.

0.5\*(300/10) = 15m from the long edges

0.5\*(500/10) = 25m from the short edges = distance between transects

300m

500m

1. What are the three conductance pathways for apparent soil electrical conductivity measurement?

Solid, Liquid, Liquid-Solid

1. What are the two principles that operate all electromagnetic induction instruments?

Maxwell’s Equations:

Ampere’s Law

Faraday’s Law

1. What is the ideal range of moisture contents (in % of field capacity) for an ideal EMI survey?

70% - 100% of field capacity

1. What are all the possible depths of measurement (in meters) for an EM38-MK2? How many depths can be simultaneously measured?

0.375m, 0.75m, and 1.5m

2 depths measured simultaneously