



What if we consider soil to be random ?

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Incomplete knowledge of the initial state and its influencing factors creates a situation where a process can be considered to be random. This may also apply to soil formation and many of its processes. Additionally, soil is spatially variable over different scales and orientations and often we lack process information to make sufficiently reliable deterministic interferences.

Yet, soil scientists identify soil forming factors, define soil taxonomic units, map soil as a combination of non-overlapping units with a unique definition, model soil processes and use population statistics to sample and describe its variation. These actions rely on a concept where soil is composed out of a set of individuals which are clearly identifiable, differentiable and measurable.

This contribution aims at reflecting on how we can deal with soil as a random field and what solutions modern tools such as pedometrics and proximal soil sensing can offer to improve our understanding and characterization of soil properties.