

Practical application of fusing spectroscopic techniques in routine soil analysis: Lab-in-a-Box (LiaB) concept

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Description:

Modern spectroscopic techniques give an opportunity to analyse soil samples more time and cost effectively, while eliminating the need to use substances harmful to the operator and the environment. Above that, their simplicity of operation allows to expand the circle of users as no thorough knowhow of analytical chemistry is needed. Most interesting is that these attributes do not have to come at the expense of accuracy. The improvements in instrument manufacturing, computing power and advanced calibration modelling algorithms have provided the tools to realize a sensor fusion concept combining mid-Infrared spectroscopy and X-ray fluorescence that meets these criteria: the Lab-in-a-Box (LiaB). In this workshop we will provide a hands-on experience of the analysis of soil samples using the LiaB from sample reception and preparation to analysis. For each step, we will briefly discuss the theoretical background, demonstrate the procedure, while highlighting the strengths and weaknesses of the process.

Theme: Advances in measuring and modelling soil processes

Keywords: spectroscopy, soil properties, XRF, MIR

Type of masterclass: Tutorial

