Coordinating and integRating state-of-the-art Earth Observation Activities in the regions of North Africa, Middle East and Balkans and Developing Links with GEO related intiatives toward GEOSS

On the necessity of standardization

Capacities and Skills: Towards the provision of EO services in the Balkans

T4.2 – Improved Food Security and Water Extremes Management

June 1st, i-BEC premises, Thessaloniki

i-BEC INTERBALKAN ENVIRONMENT CENTER

European Commission

GEO GROUP ON EARTH OBSERVATIONS

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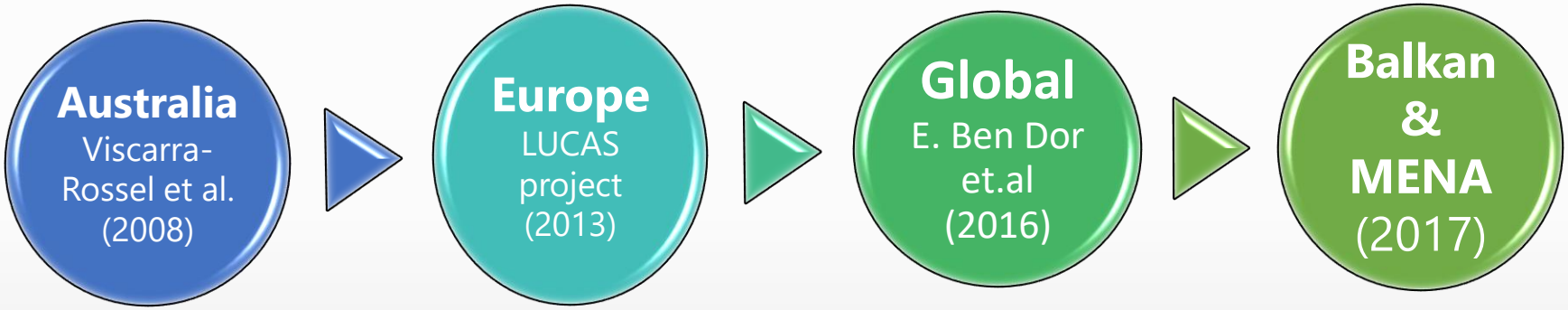
Standardization - meaning

- Standardization is the process of implementing and developing technical standards
- Standardization can help to maximize
  - Compatibility
  - Interoperability
  - Safety
  - Repeatability
  - Quality of the measurements

SSL initiatives



Problem

- The lack of a commonly applied protocol leads to significant constraints to obtaining a robust model and hinder any attempt to compare SSL

- Spectra are influenced not only by soil components but also by the laboratory protocols

Problem

Non systematic effects

- random noise
- uncertain effects and instabilities

Systematic effects

- white reference(WR)
- spectral configuration
- measurement geometry
- fore optic status
- operator
- particle size distribution
- environmental conditions

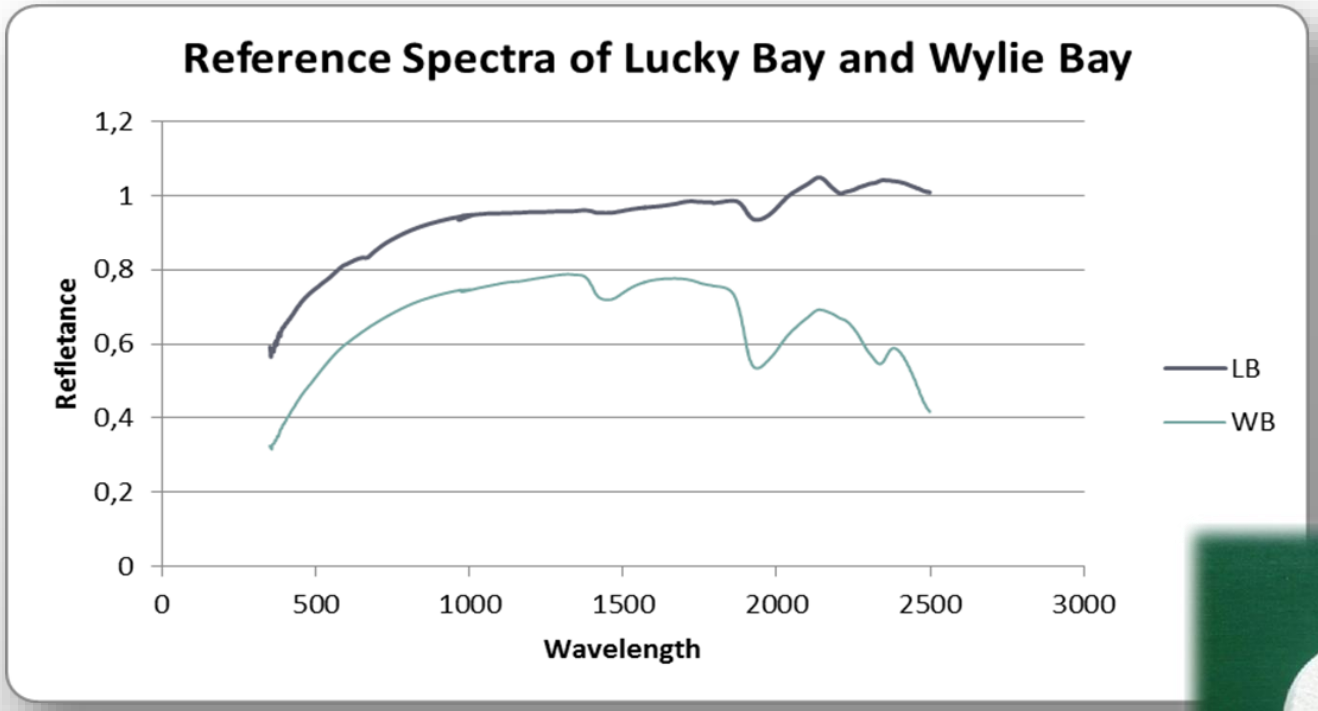
Solution

- A commonly applied protocol (E. Ben Dor et al. 2015)

- The use of Internal Soil Standard (ISS)

inexpensive, simple to use, easily delivered overseas, homogeneous, stable in space and time, and useful for both radiometric and spectral calibration

Internal Soil Standard



Lucky Bay Wylie Bay

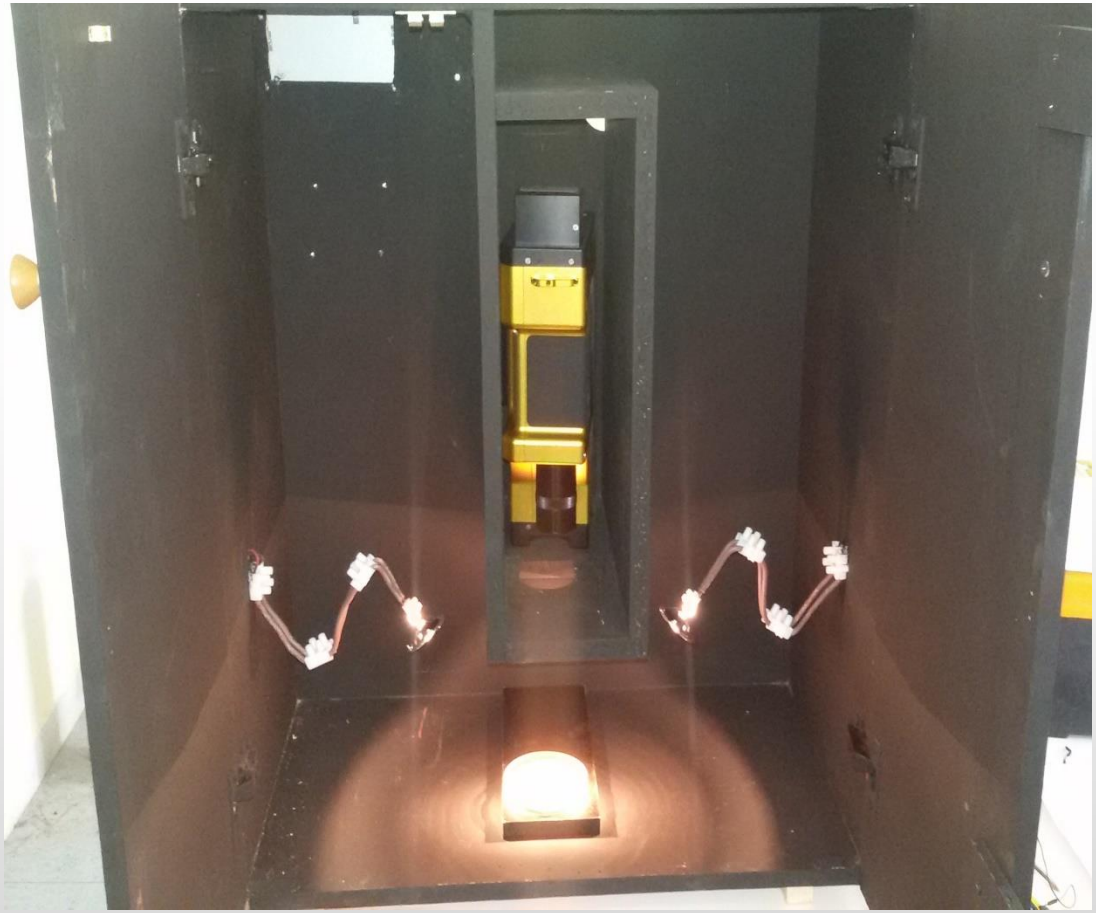
Calibration equation

$$CF(\lambda) = 1 - \frac{S\rho(\lambda) - SBM\rho(\lambda)}{S\rho(\lambda)}$$

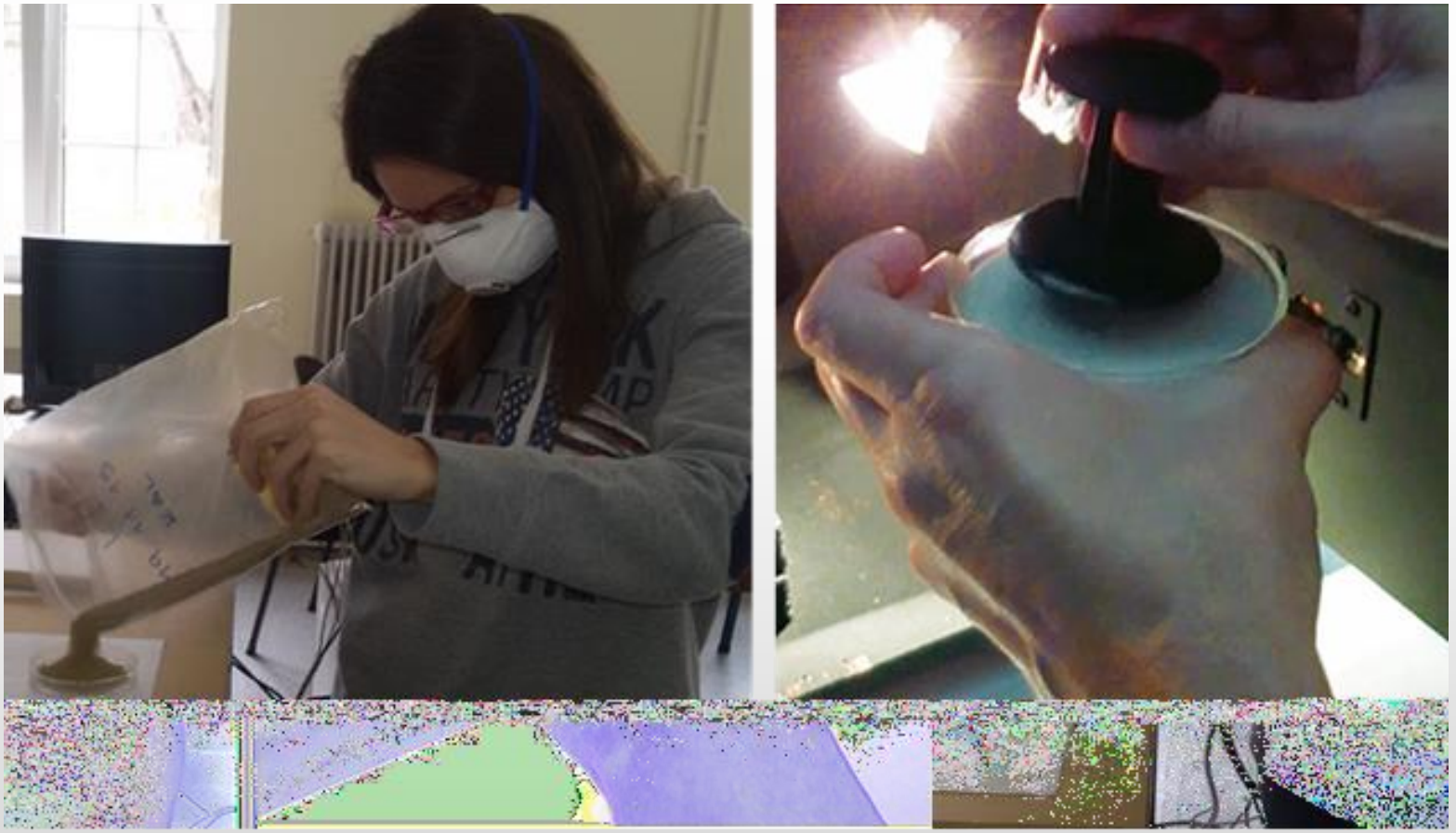
- CF = a correction factor
- Sρ = reflectance of the ISS reference (the WB and LB measured at the user's setup)
- SBMρ = reflectance of the soil benchmark (SBM) ISS reference

Laboratory soil spectroscopy

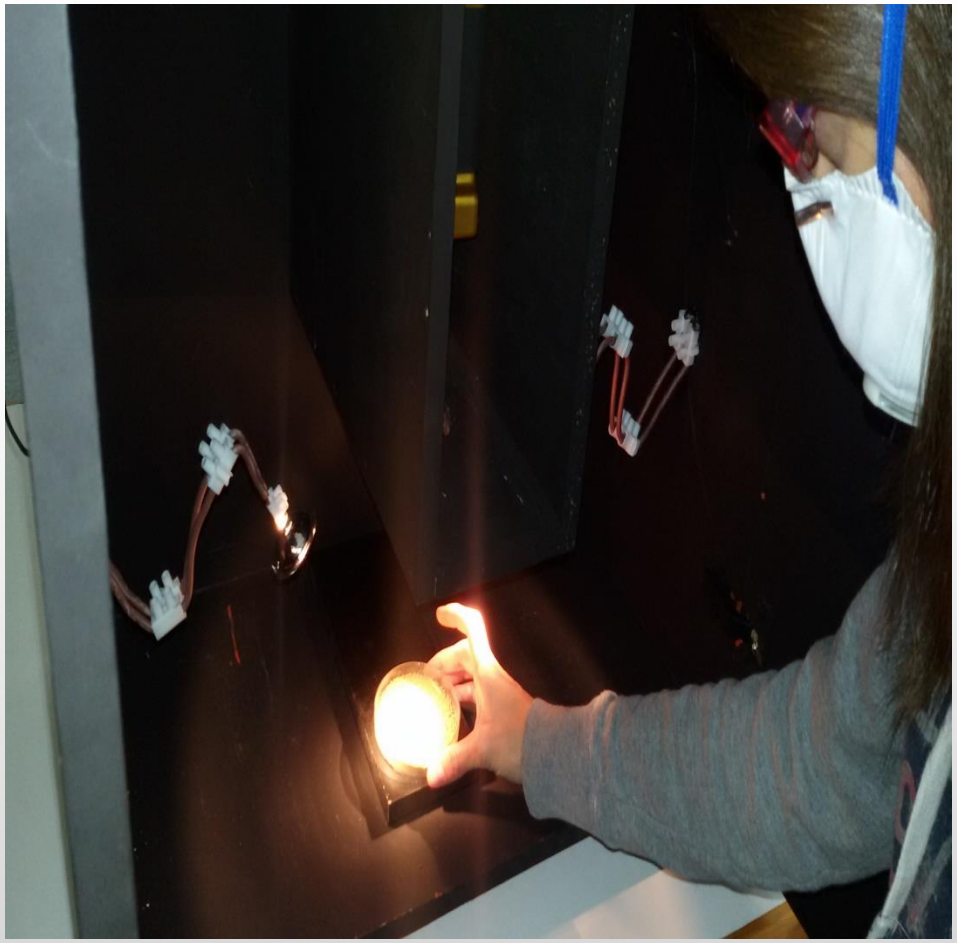
The measurements are held in a dark box environment with no external lighting. It is illuminated by two lambs placed at 45°



Laboratory soil spectroscopy



Laboratory soil spectroscopy



Thank you for your attention