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(57) Abstract :
The present invention reveals an improvement of digital spectral signatures of farming soils based on soil nutrients related to the crop growth. In an embodiment, the soil samples were measured by an electronic device developed by ASD Company, USA with programming system and software. The measured samples spectrum range was visible to shortwave infrared. The designed regression model detects the major soil nutrients of obtained visible Near Infrared and Short wave infrared channels of spectrum. The soil major nutrients detection method is based on developed spectral signatures of soil nutrients from farming sites. The soil spectral signatures will be developed and stored in the database and used as an training features for matching the unfamiliar soils with improved signatures or as an end members as input for satellite or airborne hyperspectral imagery to classify and map the soils. The developed regression model is validated by determinant of coefficient and root mean square error.

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