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EARTH OBSERVATION SYMPOSIUM (B1)
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SMILE DISTORTION EXTENT ESTIMATION FOR HYPERSPECTRAL DATACUBES

Abstract

Smile distortion due to mixing of two or more wavelengths in a single band is said to exist in a data cube if there is brightness gradation in its MNF -1 band . This causes shifts in characteristic absorption features of groundels; which when compared against a spectral library, results in either a mismatch or no match. This poster is intended to demonstrate the extent of distortion that can be quantified by plotting sample pixel spectra from the data cube at locations of minimum and maximum brightness gradation indicated in the MNF-1 band, given that the samples extracted are from a single class; the amount of shift in nanometers of the class's characteristic absorption feature determines the extent of smile. The data cube is usable if there is no shift in the absorption features from the same class. This shift appears iff smile distortion is equal to or exceeds the bandpass of the sensor