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Analysis and Design of Wide Spectral Imaging Spectrometer for CTBT OSI

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According to scenarios of Comprehensive Nuclear-Test-Ban Treaty On Site Inspection (CTBT OSI), a kind of wide spectral imaging spectrometer based on aviation platform (including UAV) is proposed. The methods of detecting and recognizing nuclear test based on optical remote sensing are summarized, and several application fields using hyper spectral data are analyzed, such as detecting the changes of geography, landform and its spectrum, as well as plant stress. Aiming at the analyzed features, single grating is adopted to realize highly compact design of the spectrometer, which has wide spectrum range from VIS to MWIR (0.4 μ m -5 μ m) with high SNR (1000). Based on the further study and comprehensive discussion with the experts in the field of nuclear test inspection, we expect to upgrade the spectrometer for a better application.

Promotional text

According to scenarios of CTBT OSI, a kind of wide spectral imaging spectrometer based on aviation platform (including UAV) is proposed in this paper which can be used for detecting and recognizing nuclear test, expanding methods of CTBT OSI.

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