

Measurement of forest fire parameters with multi-spectral imaging in the medium infrared

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Abstract

Infrared (IR) imaging is a standard technique for the detection of forest fires but its use to measure the physical parameters of fires faces difficulties due to their spatial and spectral complexity. Multi-spectral images in the Medium IR make possible to classify the scene in different fire regions, thus enabling a region-specific processing and providing values for the instantaneous radiated power and the total radiated energy. Comparison with energy release determined from fuel consumption results in an estimation of a radiative energy fraction of $14\pm 3\%$. It is the first time that this parameter is measured by IR imaging in the field.

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