ELECTROMAGNETIC RADIATION PROPAGATION IN LARGE FIRES

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ABSTRACT

Experimental measurements of electromagnetic radiation propagation in the visible, infrared and radar frequencies indicate that the primary obscuration effects are due to very small smoke particles, spectral absorption by carbon dioxide with water vapor and temperature generated temperature inhomogenities. Visibility is reduced to tens of feet, IR attenuation coefficients are on the order of one km^{-1}, while radar was foreshortened by one percent with from three to nine minutes of beam bending.