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A METHOD FOR THE DETERMINATION OF SURFACE EMISSIVITIES OF MULTISPECTRAL DATA IN THE 8 µm - 13 µm REGION

W. H. CARNAHAN AND S. N. GOWARD
Indiana State University, Terre Haute, Indiana

The authors have developed a method to determine emissivities and kinetic temperatures of land cover materials through analysis of multispectral remote sensor measurements in the 8 - 13 µm spectral regions. Simultaneous measurements from two spectral regions of the 8 - 13 µm thermal infrared spectral region are ratioed to determine surface emissivities following the method proposed by Vincent and Thomson¹. Assuming that emissivity is constant in the 8 - 13 µm region, surface emissivities and kinetic temperatures may be computed. A zero band width approximation of the integrated gray-body radiance is evaluated to facilitate computer processing. The authors discuss the method and demonstrate its application to aircraft scanner data for the study of heat radiation from urban buildings.