

*MBS 02-01*

Munsell reflectance spectra represented in three dimensional Euclidean space

Kimball Romney , Tarow Indow

---

In this paper we describe the results of an investigation into the extent to which the reflectance spectra of 1269 matt Munsell color chips are well represented in low dimensional Euclidean space. We find that a three dimensional Euclidean representation of the spectral data in terms of the Munsell color space. In addition we analyzed a data set with a large number of natural objects and found that the spectral profiles required four basis factors for adequate representation in Euclidean space. We conclude that four basis factors are required in general but that in special cases like the Munsell system three basis factors are adequate for rather precise characterization.