

The spectrum characteristics of Karst rock in Southwest China

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Abstract: "Karst topography is a landscape shaped by the dissolution of a layer or layers of soluble bedrock, usually carbonate rock such as limestone or dolomite. Due to subterranean drainage, there may be very limited surface water, even to the absence of all rivers and lakes. Many Karst regions display distinctive surface features, with sinkholes or dolines being the most common. However, distinctive Karst surface features may be completely absent where the soluble rock is mantled, such as by glacial debris, or confined by superimposed non-soluble rock strata. In this study, two kind samples, one is acid soil and the other is Karst rock, are involved. Much attention is paid on the difference between the two spectrums. Also it is tried to explain what cause this characteristics, including absorbed valleys and reflecting peaks at the specific positions. Than the experiment had been taken which was designed to obtain the different influence of matter around the sample with different percent of sample coverage, trying to find out the limit for indicating the karst rocks. The result showed Karst rock spectra has some its own features near 600nm, 1100nm, 1450nm, 1900nm,

2200nm and 2300nm compared to acid soil's. These features show the different composition or composition content in the two samples, and coincide with the references. Further research conclusions need more data such as sample composition and its content. And for mixed field of view (under natural illumination), spectrum of rock is easily affected, however at 2097 and 2336nm, the proportions of rock are high related to the reflectance in continuum removal curves. However, more other work needs to focus on and give more precise parameters to predict rock proportion.

key words: spectral characteristics, karst rock