

HYPERSPECTRAL REGOLITH AND ALTERATION MINERAL MAPPING

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New remote hyperspectral sensing technologies can now provide seamless maps of abundances and physicochemistries of alteration and regolith minerals like iron oxides (hematite and goethite), clays (kaolinite, illite, smectites), chlorite, micas, amphiboles and talc as well as green and dry vegetation.

New methods for addressing the effects of obscuring materials like vegetation and kaolin to retrieve the desired “absolute” abundances and chemistries of target minerals have now been developed.

One of the main challenges has been accurately measuring “relic” alteration minerals within the regolith in the more weathered parts of Australia.

Furthermore, mapping the regolith mineralogy provides a valuable information for more accurately mapping the regolith, including transported from in situ materials.

These new technologies are now been tested for the 1:100 000 scale mapsheet centered over Kalgoorlie as part of a LEME-GSWA-CSIRO-HyVista-PDAP collaborative project.