Talk: SPECTRAL SENSING TECHNOLOGIES IN GEOLOGY

SPEAKER: Professor Carlos Roberto de Souza Filho
Department of Geology and Natural Resources
Institute of Geosciences
University of Campinas (UNICAMP), Brazil

Biography: Professor Carlos Roberto de Souza Filho is the Chair of the Research Group and Labs on Geotechnologies (VNIR-SWIR-TIR Spectroscopy and Remote Sensing, Geophysics, GIS, Geomathematics), at the Geosciences Institute, University of Campinas (UNICAMP), Brazil. He received his Ph.D. in Remote Sensing & Tectonics from the Department of Earth Sciences, The Open University, United Kingdom. He has developed numerous methods and applications of Geotechnologies in basic geology, resource exploration and planetary studies. He is the author of more 120 PEER-reviewed articles and received a number of science awards and large projects during his career. He has supervised 22 MSc and 24 Ph.D. students plus 14 postdoctoral researchers at UNICAMP between 1997-2016. He is currently the Associate Editor of the International Journal of Applied Earth Observation and Geoinformation.
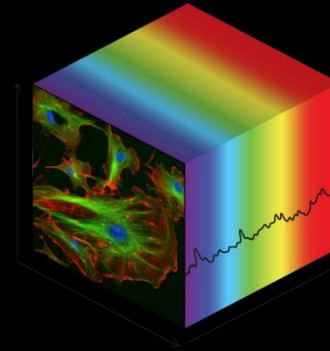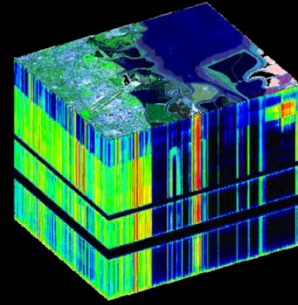
Talk: SPECTRAL SENSING TECHNOLOGIES IN GEOLOGY

SPEAKER: Professor Carlos Roberto de Souza Filho
Department of Geology and Natural Resources
Institute of Geosciences
University of Campinas (UNICAMP), Brazil

Details of content: A new array of passive remote sensors operated on ground, airborne (aircraft and UAVs) and orbital platforms with multispectral, hyperspectral and ultraespectral coverage in the VIS-NIR-SWIR-TIR range (0.4-14µm), now provides the geologic community with both public and proprietary data unprecedented in history. These Geotechnologies have aided in the discovery and sustainable production of mineral resources from innovative approaches. In this talk, we intend to address several successful case studies involving the use of such spectral sensing technologies in mining and petroleum applications and development of these resources, as well as report on available and emerging systems tuned for geological applications in integrated and multiscale approaches. Among such systems stand out those considered for target detection in the field (eg Fieldpsec, OreExpress, Halo), in core logging (eg, SisuRock, Terracore, Corescan, Hylogger), in mine face mapping (eg, AISAFenix , HySpex), in airborne surveys (eg, AISA Fenix, AISA Eagle-Hawk-Owl, HyMap) and in orbital acquisitions (eg, ASTER, WV-3, Sentinel-2; plus soon to be launched sensors: eg, EnMap, HyspIRI). The most tangible importance to the segment of mineral resources is the demonstration that these instruments, data and derived information can be used systemically, from the continental to the deposit scales, providing critical insights for geologists. This talk intends to show recent progress on these key topics.

SPECTRAL SENSING TECHNOLOGIES IN GEOLOGY

SPEAKER: Professor Carlos Roberto de Souza Filho
Department of Geology and Natural Resources
Institute of Geosciences
University of Campinas (UNICAMP), Brazil