EGU General Assembly 2020

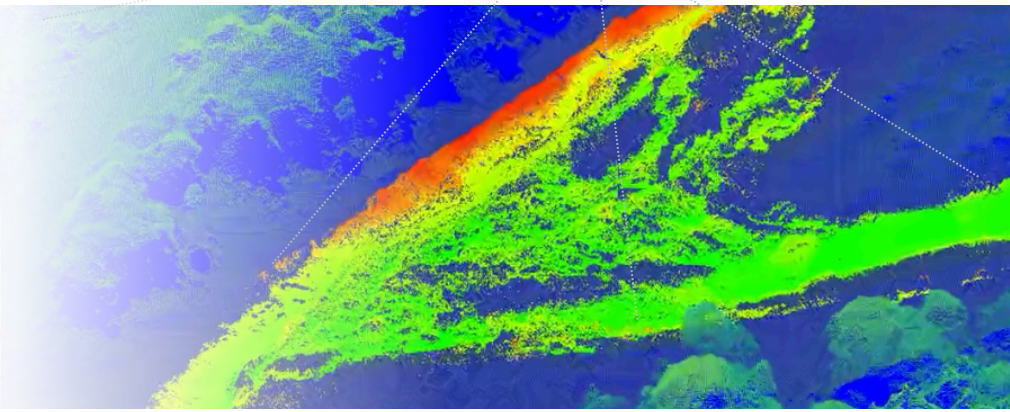
HZDR HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

HiF HELMHOLTZ INSTITUTE FREIBERG FOR RESOURCE TECHNOLOGY

Integrated Environmental Monitoring of AMD Affected Waters Using Hyperspectral Imaging and In-situ Analytics

H. Flores, S. Lorenz, R. Jackisch, L.Tusa, C. Contreras, R. Zimmerman and R. Gloaguen

Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology, Exploration Technology, Germany (h.flores-rojas@hzdr.de)



Proposed workflow

Drone-borne HSI Acquisition

Pre-processing of hyperspectral images

Ground-sampling and measurements

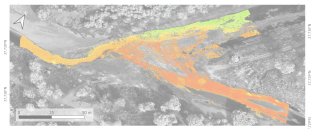
Laboratory Analysis

Machine Learning Framework

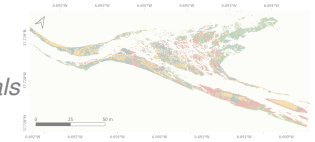
High-resolution Maps

Surface Water

pH



Iron Minerals



Soil Sediments

High-resolution maps to monitor Acid Mine Drainage extent in surface water (hydrogeochemical properties) and in river sediments (mineralogy) by means of drone-borne hyperspectral imaging (HSI)