Midterm 2 Notes

Monday, November 7, 2022   3:29 PM

Lidar - Light Detection and Ranging, remote sensing method that uses lasers to measure elevation, uses ultraviolet, visible and infrared

SAR - Synthetic Aperture Radar, is a form of radar that can penetrate through cloud cover (microwave), smoke, haze and also darkness to see features that other imaging techniques cannot.

INSAR- Interferometric synthetic Aperture Radar, a type of mapping technique for ground movement through the use of SAR. It detects surface movement and ground displacement with almost pinpoint accuracy.

Sonar- sound waves, it is used to see what is beneath the waves. You send rapid sound pulses, that bounce off the sea floor to see what's below.

Red wavelength - long wavelength, low frequency, longest actually of visible light.

IDW- Inverse distance Weighting, is an interpolation method based on the distance among measured points.

Kriging - Daniel Krige, Kriging is a geospatial method that generates and predicts unknown values from a set of points. Is also an interpolation method based on statistical relationship and the distance among measured points.

Tobler's law - Everything related to everything else, but near things are more related than distant things

A priori - based on theoretical deduction rather than empirical observation.

Thiessen polygons - it is a 2D shape whose boundaries contain all space which is closer to a point within the area than any other point without the area.

Remote sensing classification- two types, supervised and unsupervised

K-means - clustering model, that partitions N observations into K Voronoi cells (unsupervised)
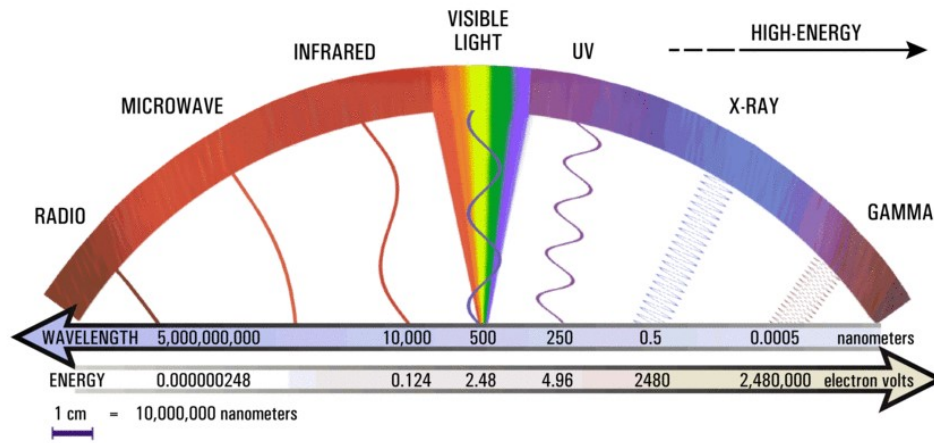
DBCAN - clustering model that groups closely packed points separated by low-density regions.

Hierarchical - clustering model that builds hierarchy of clusters.

TWI- Topographic Wetness Index, it is used to quantify topographic control on hydrological processes.

Electro-magnetic spectrum - has amplitude, wavelength and frequency properties.

Which has the biggest energy? Gamma Rays

Confusion Matrix - tells you what your model did right and what it did wrong.

Ground control point - something you can count on to be always there in the scene, and you can use to measure other things by.

Psuedo Invariant T -

RTK - Real time kinematic positioning, it is a technique used to improve the accuracy of a standalone GNSS receiver.

GNSS - Global navigation satellite systems

Hyperspectral remote sensing - collects and process data from across the electromagnetic spectrum, usually used to find and identify materials or detect processes.

GCM - General Circulation model

OBIA - Object based Image Analysis

Structure from motion - imaging technique used to create 3D structure from multiple 2D image sequences.

GPS Stuff - Global positioning system

DEM - Digital elevation model