Using Google Earth Engine cloud geospatial platform for Remote Sensing applications

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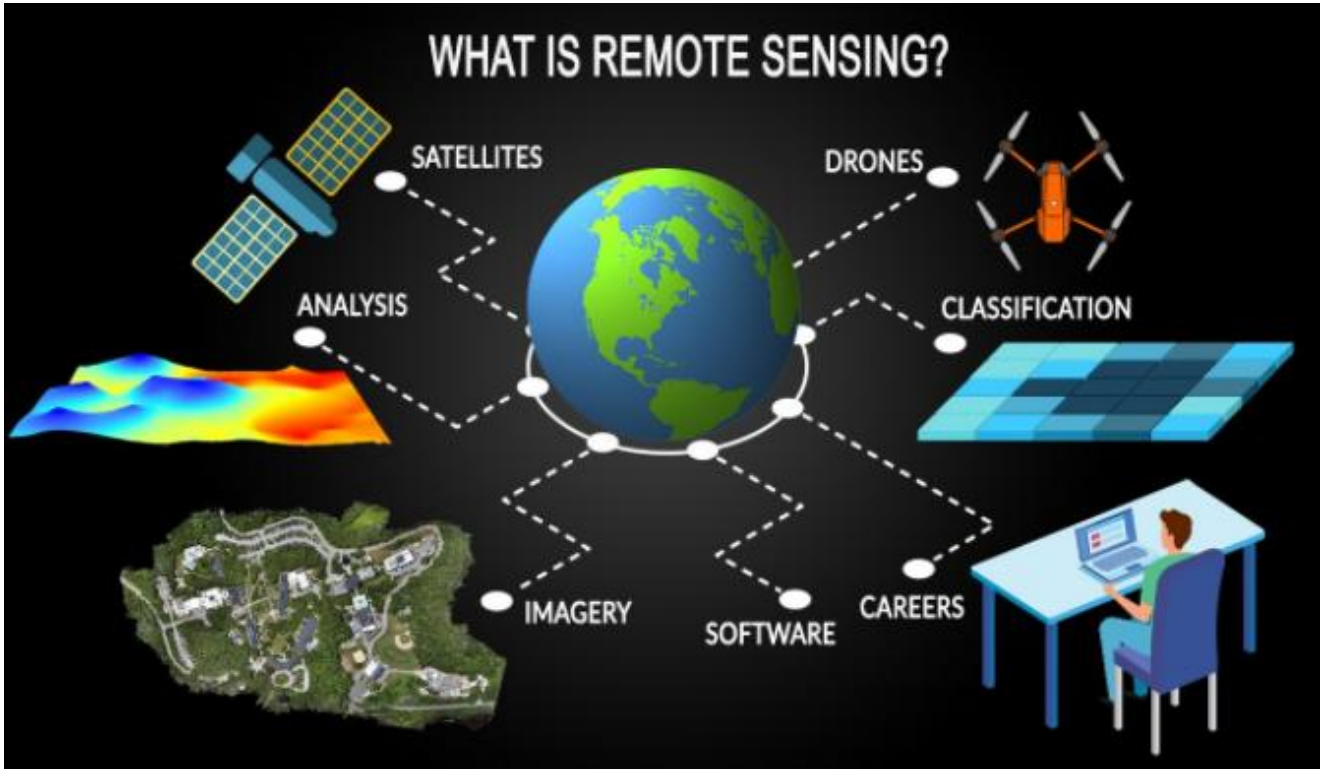
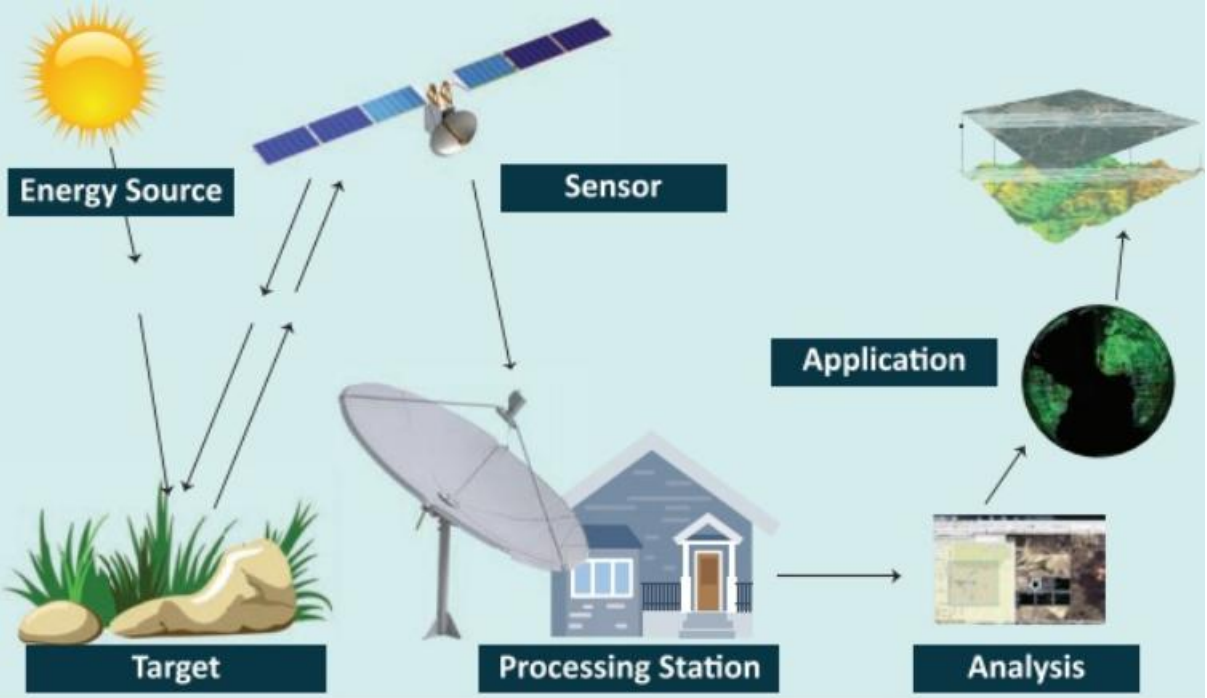
Fundamentals of Remote Sensing



Remote Sensing → Measuring Radiance
Not physical contact

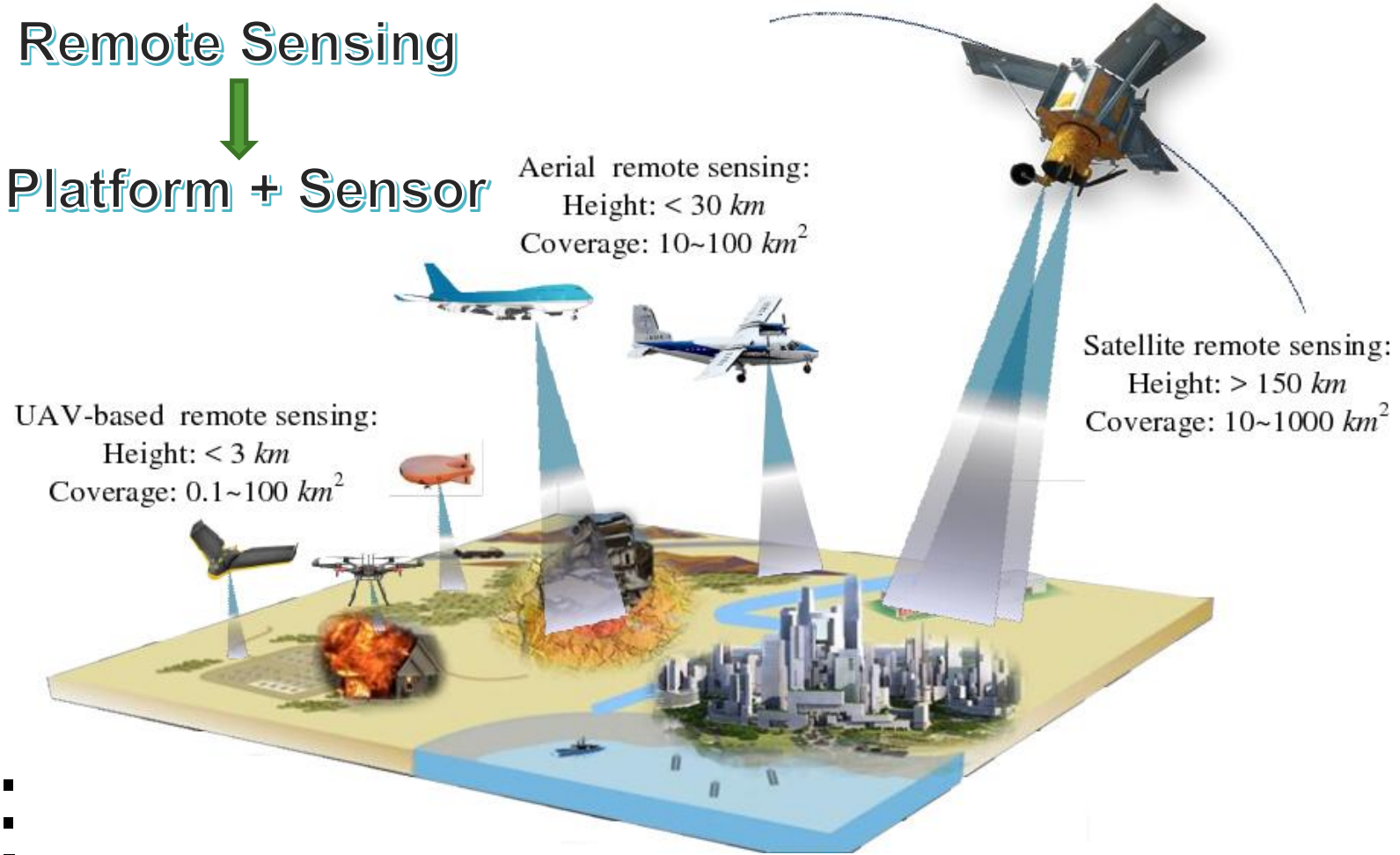
Remote Sensing Process



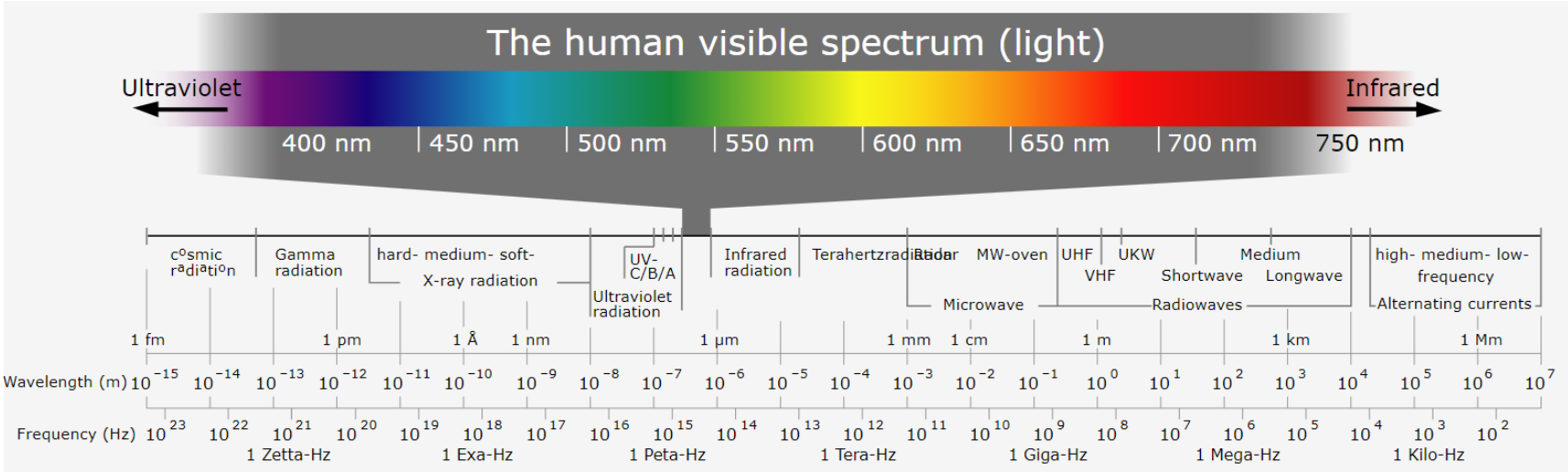
Remote Sensing

↓

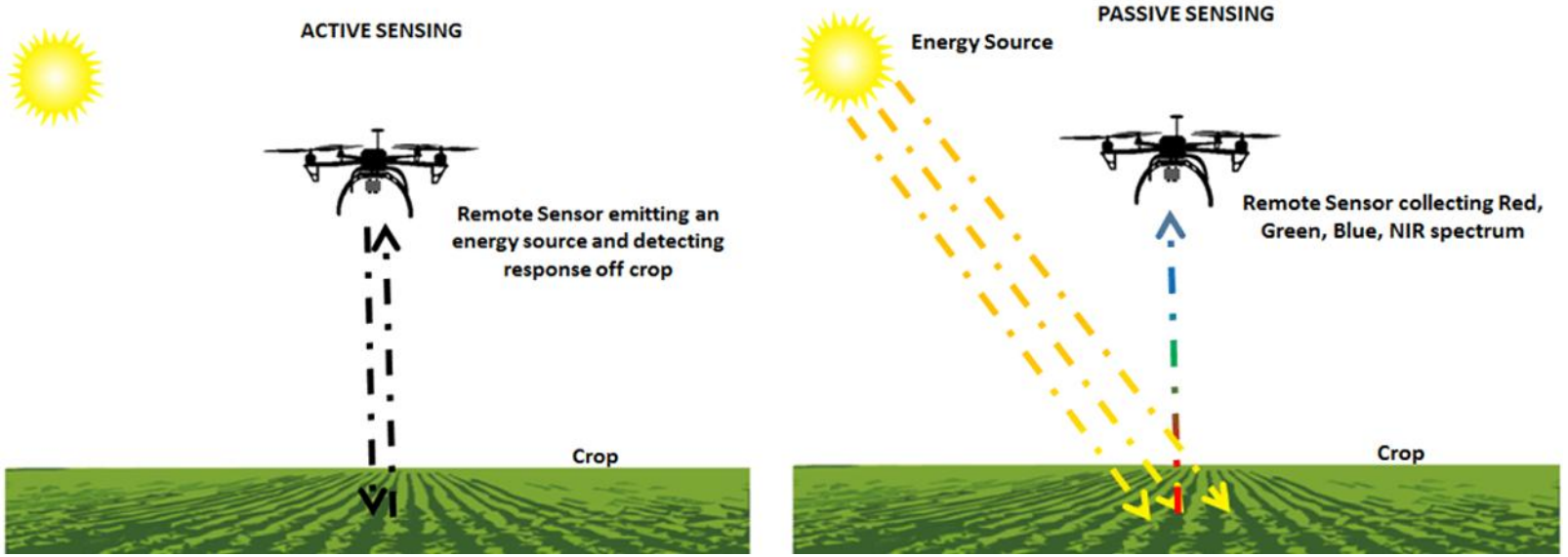
Platform + Sensor



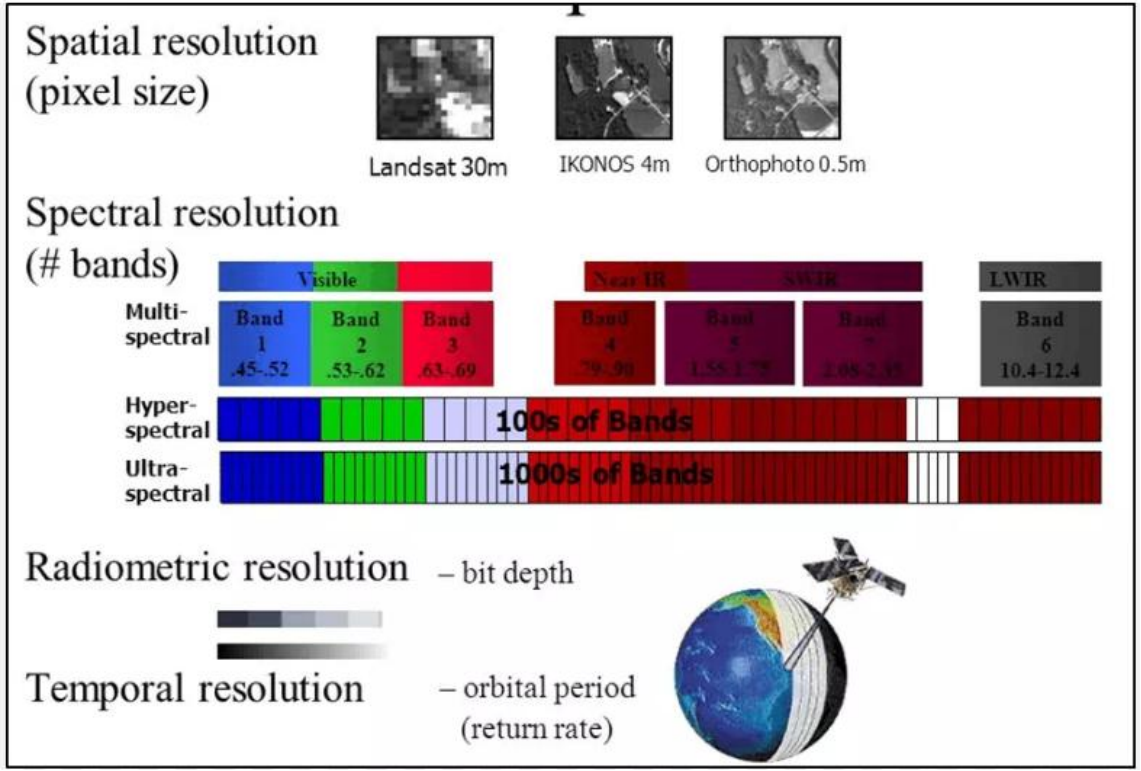
Electromagnetic spectrum



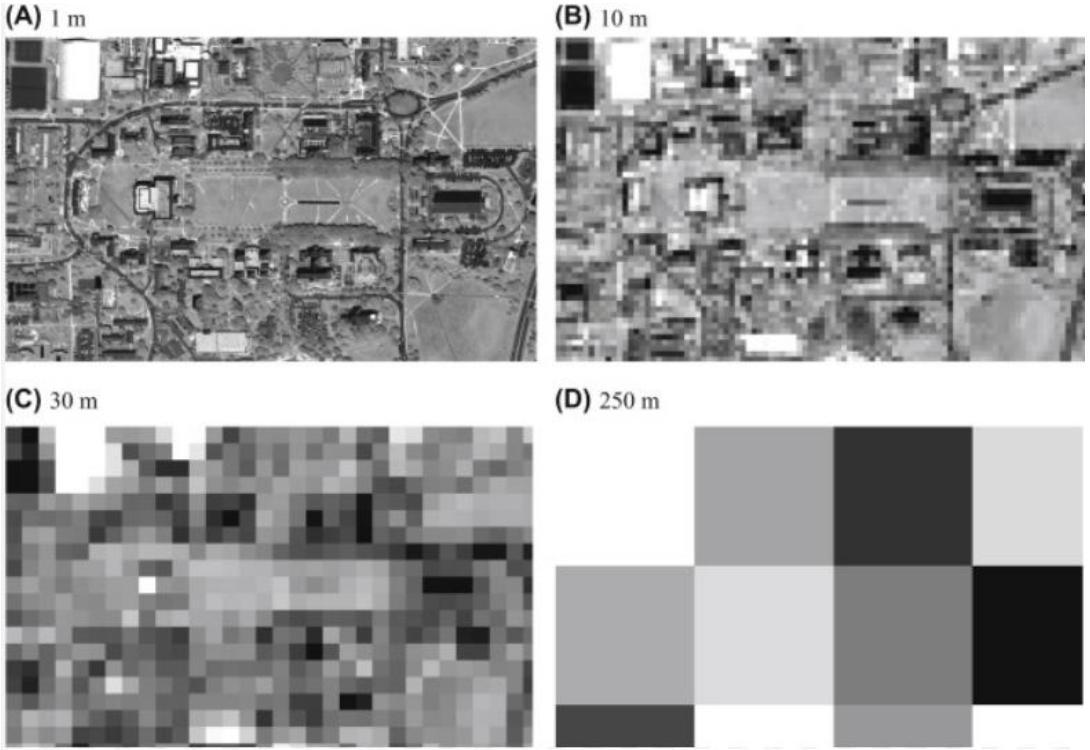
Sensor Types



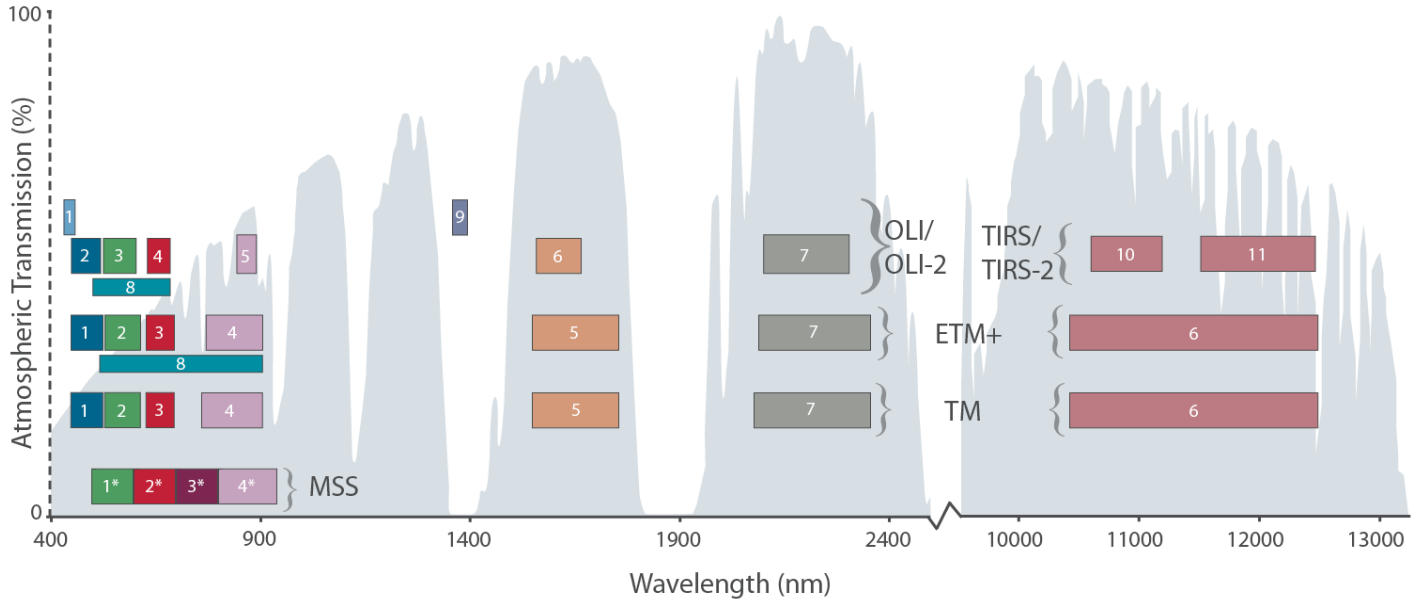
Resolutions



Spatial Resolution

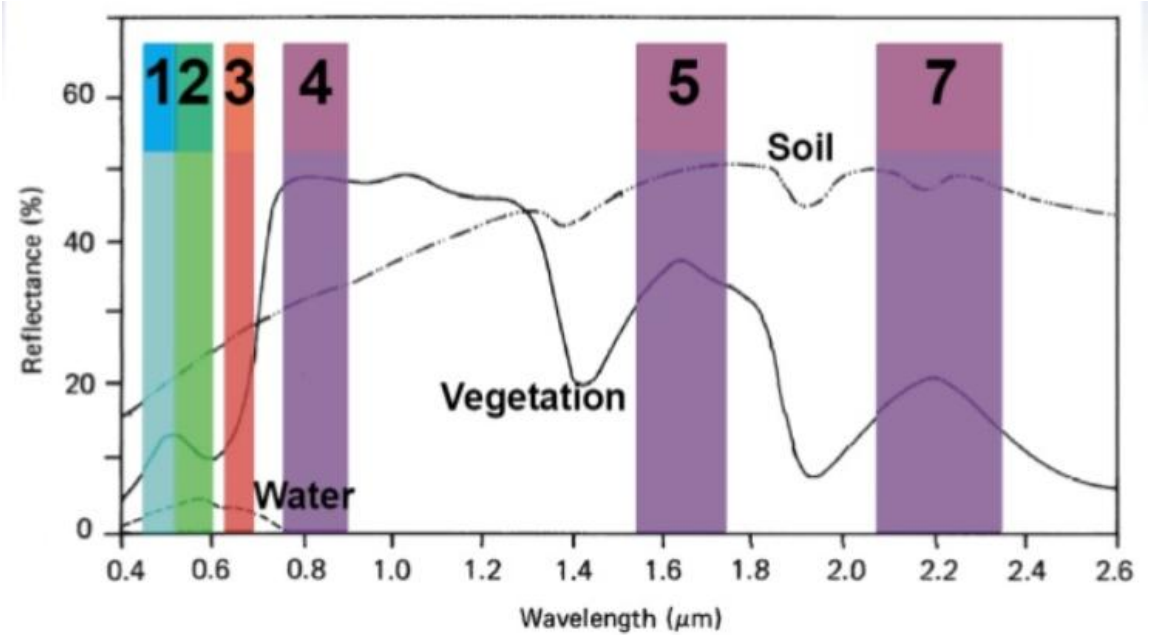


Spectral Resolution



https://www.usgs.gov/faqs/what-are-band-designations-landsat-satellites

Spectral Resolution - Spectral signatures



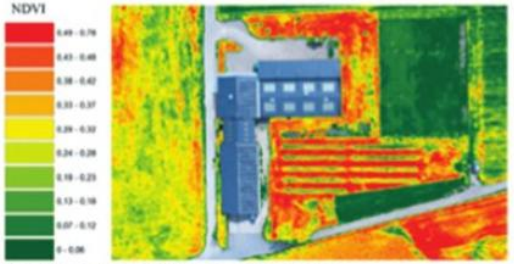
Multispectral indices

Multispectral indices are useful to improve the knowledge of plant organic functionality.

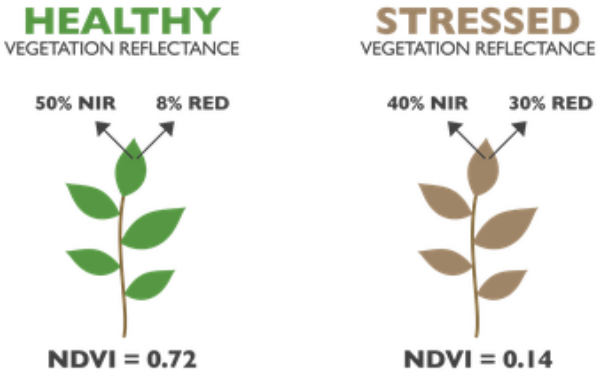
$$NDVI = \frac{NIR-RED}{NIR+RED}$$

Résultat classique pour comparaison

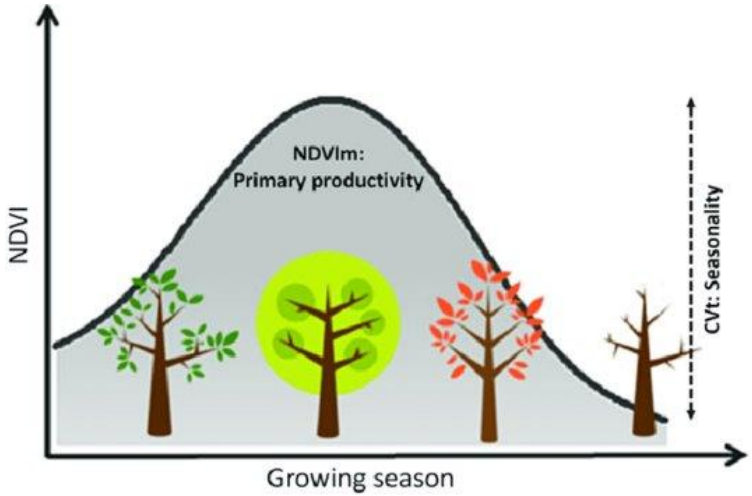
Cliché brut.

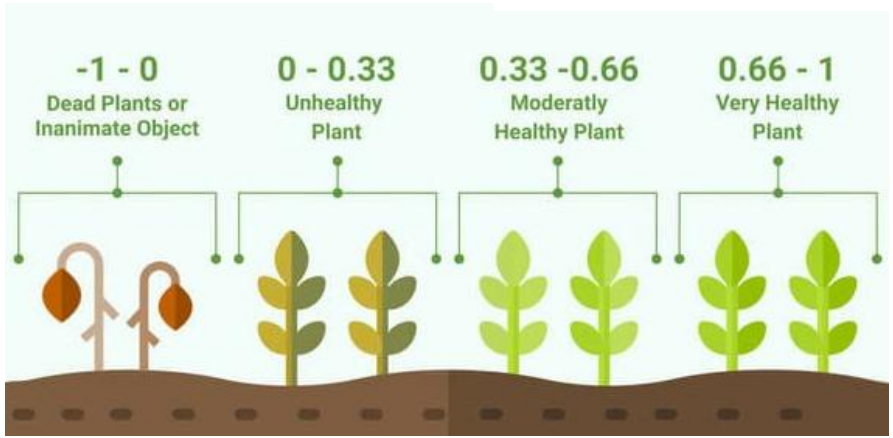


Carte d'activité végétale NDVI obtenue à partir du cliché brut.



$$NDVI = \frac{NIR - RED}{NIR + RED}$$





https://cesarivanalvarezmendoza.users.earthengine.app/view/ndvi

Where we can use Google Earth Engine GEE

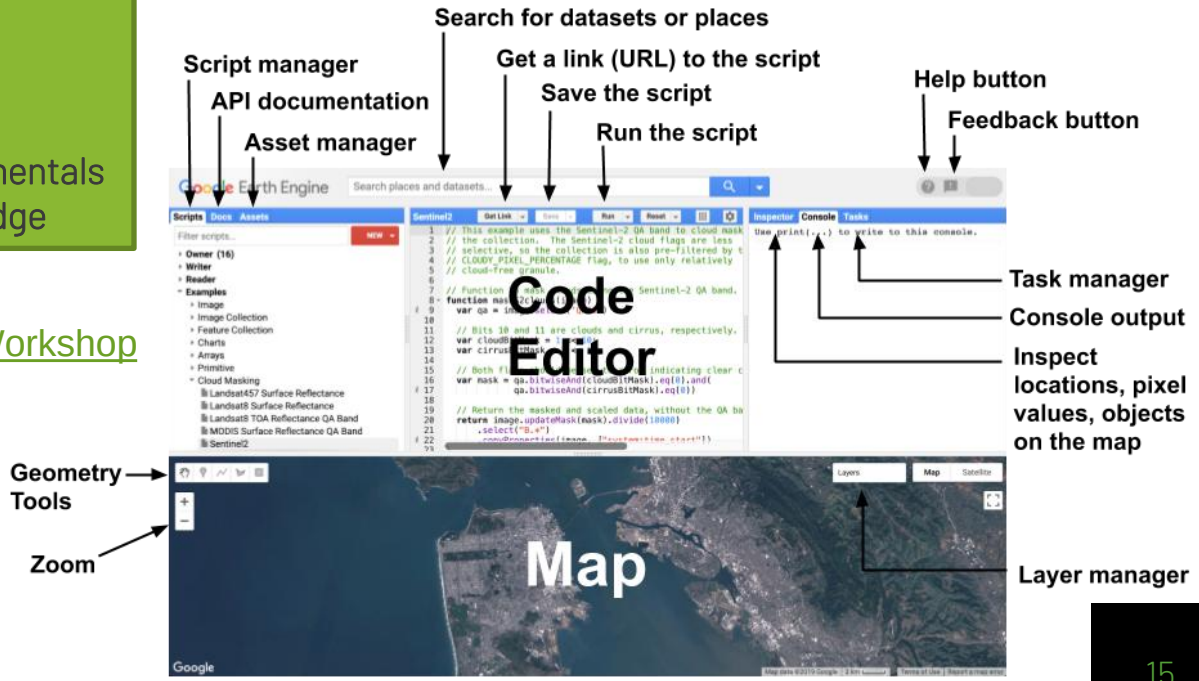
- GEE Javascript
- Earth Engine (EE) Python API
- rgee package R
- Google Earth Engine QGIS complement

GEE a cloud geoprocessing service

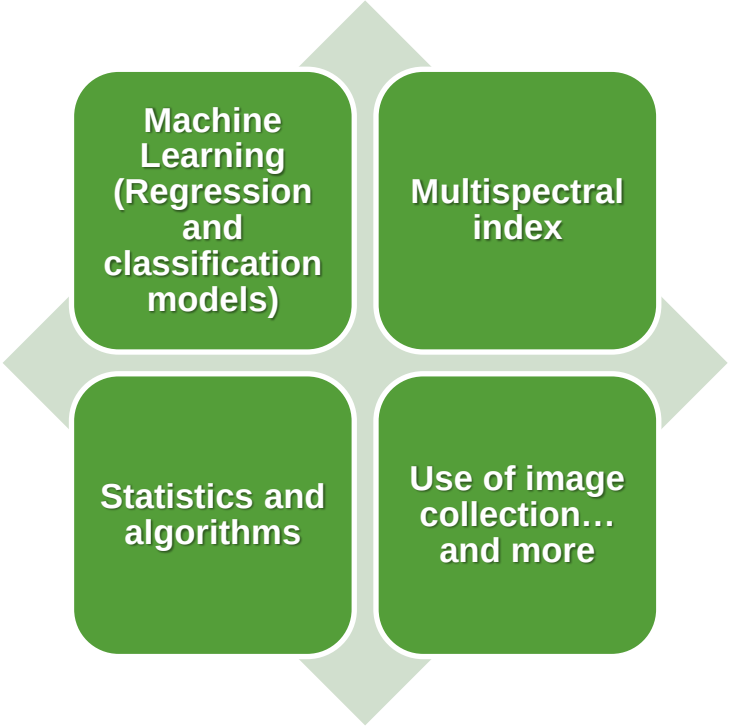
What do you need?

- Gmail account
- Access to GEE
- Javascript or Python fundamentals
- Remote Sensing knowledge

https://github.com/osoivan/GEEWorkshop



What things can we make with GEE?



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Thanks for your attention!