

Remote Sensing

- Land Photography
 - Main cause of blurriness is water vapor in the air scattering light.
 - Lenses can be filtered, but the water vapor haze may be too thick to obtain an image.
 - Problems:
 - When creating time lapses to monitor environments, haze may obscure important detail.
 - Predicting when shooting conditions are optimal is difficult; equipment must be deployed very quickly if conditions are correct.
 - Solutions:
 - Shoot on days of lower humidity. Shoot earlier in the day or later in the evening.
- Remote Sensing
 - Optical remote sensing satellites measure electromagnetic radiation reflected from Earth's surface.
 - Radiation intensity is then overlaid on high-resolution images of earth's surface, allowing scientists to view and interpret sources and sinks of various materials across earth's atmosphere and surface.
 - Water Vapor Remote Sensing
 - Water vapor in the atmosphere absorbs photons, increasing the temperature of the vapor.
 - Atmospheric water vapor can also affect the transmission of radio waves.
 - Remote sensing of water vapor by GPS
 - The delay of reception of GPS signals can be linked with the concentration of water vapor in the air that the signals are being transmitted through.
 - Using data from existing satellites, scientists can measure the concentration of water vapor of air in storms, giving a more accurate measurement of storm cell movement and size.
 - Other Remote Sensing
 - Remote sensing can be used to measure temperature at various altitudes from the surface of the earth to the edge of the atmosphere.
 - Temperature data is integrated into weather prediction models, climate change models, and climate forecasts.
 - Remote sensing may be an accurate method for measuring surface particulate matter, even down to the PM_{2.5} standard
 - Aerosol optical thickness measurements have been strongly correlated with PM_{2.5} concentrations around the globe.
 - Combining data from ground sources and remote sensing, aerosols can be tracked accurately, allowing for the visualization of global pollution sources and sinks
 - Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations, a remote sensing satellite run by NASA, has the

capability to measure vertical distribution of aerosol, giving rise to new perspectives on cloud and aerosol formation and propagation.

Sources

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