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How does remote sensing work, and what do we learn from the historical observations at the Jungfrauoch?

Remote sensing has been established as a powerful tool in studying the composition of the Earth atmosphere. One observation geometry is by using the sun as external light source, and measuring at the ground the spectra, which contain absorption features of the atmosphere. An analysis gives the concentrations of up to 30 trace gases in the atmosphere, including ozone, CO₂, methane, carbon monoxide, CFCs. The observations at the Jungfrauoch serve as an important historical data set, with first spectra recorded in the early 1950s. These spectra are the oldest existing spectral data set. During the talk the basics of remote sensing will be discussed. Furthermore, the observations at Jungfrauoch with regard to studying the composition of the Earth atmosphere and its long-term evolution will be discussed.