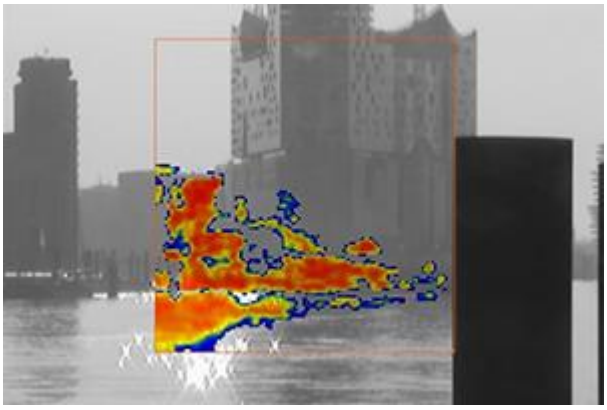
HI 90: Hyperspectral Imaging Remote Sensing System

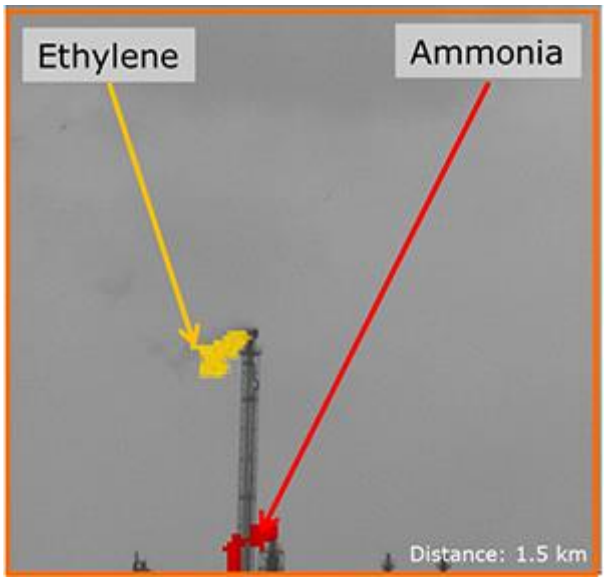
For true hyperspectral imaging with automatic detection and identification of compounds including VOCs, TICs and CWAs, Bruker's HI 90 provides unprecedented sensitivity, ease of use and superior signal processing. At the heart of the HI 90 system is an FT-IR spectrometer based on a high efficiency Michelson plane mirror interferometer with active alignment. This extremely efficient interferometric system aids in providing high quality spectra with outstanding signal-to-noise ratios. Detection is performed by a 256 x 256 pixel IR focal plane array which allows near real-time images to be collected in a 3D image cube, with each pixel containing valuable spectral information of the scene recorded. Time resolved spatial and spectral information analysis for the HI 90 is performed with Bruker's OPUS RS software.
The HI 90 housing incudes all electronics and thermal management systems in an environmentally secure housing, requiring no external fans or extra processing boards. Simply connect to the computer through the Ethernet connection and maintain full control of the image acquisition and the HI 90 positioning from a remote distance.

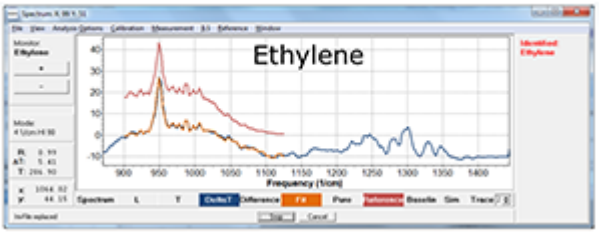
Example Measurements with the hyperspectral imager HI 90:

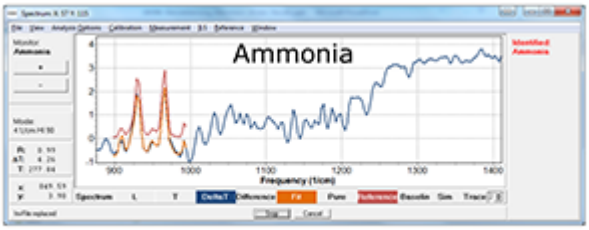
Remote measurement of sulfur hexafluoride (SF_6) in the Hamburg port area, approx. 1 km distance:



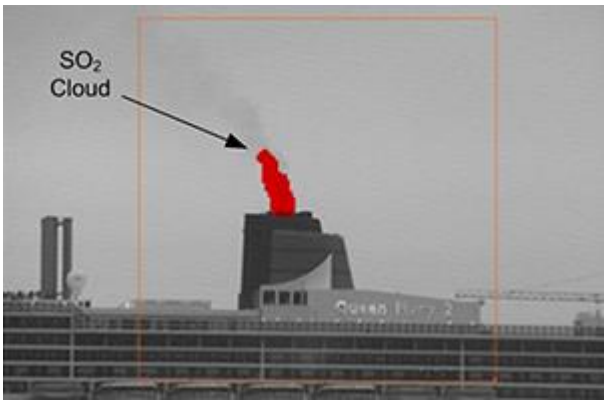
Measurement of ethylene and ammonia (NH_3) emissions from different sources on an industrial area:



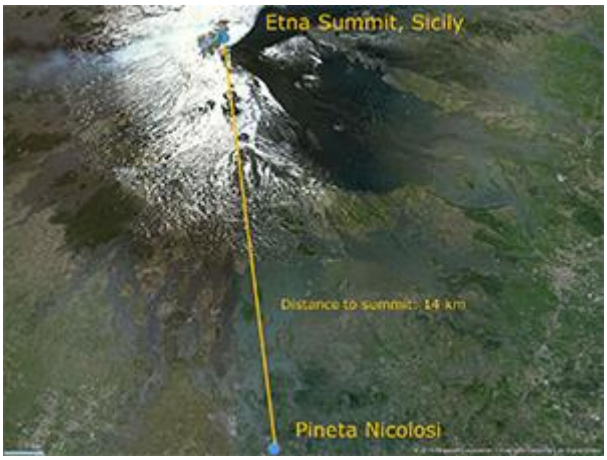


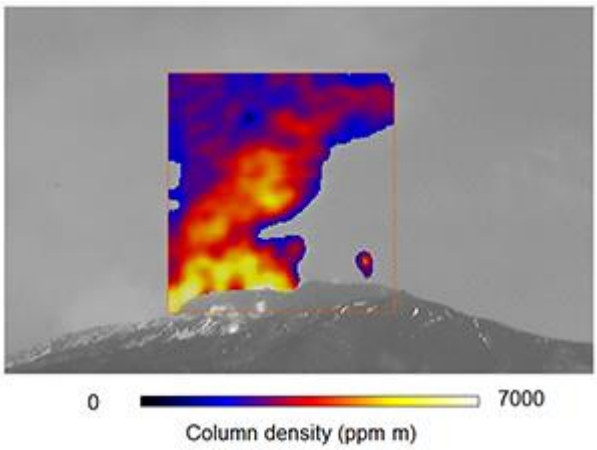


Measurement of emission from ships and vessels:



Measurement of emissions from volcanoes, here: SO_2-quantification at mount Etna, Sicily:





Measurement of methane (CH_4, natural gas):