

Abstract

Measurement of in-flight Aircraft Emissions

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Aircraft engine emission and their chemical and physical evolution can be measured in flight using high resolution infrared spectroscopy. The Airborne Emission Spectrometer (AES), designed for remote measurements of atmosphere emissions from an airborne platform, is an ideal tool for the evaluation of aircraft emissions and their evolution both on the ground and in flight. AES observes in the infrared spectral region from 4.5 microns to 16 microns with a spectral resolution of better than 0.1 cm^{-1} , and is capable of viewing through ports in the top, side and bottom of the aircraft carrying the instrument to permit views of engine exhaust of nearby aircraft or of the instrument platform aircraft.

The paper will describe the capabilities of AES and present ground measurements of a turbo prop aircraft engine.