



INO-CNR
ISTITUTO
NAZIONALE DI
OTTICA

CNR-INO National Research Council - National Institute of Optics

Our **MISSION** is to promote, support and perform research in the strategic fields of **Optics**, **Atomic Physics** and **Matter-Radiation Interaction**

Main site: FLORENCE

APPLICATION FIELDS:

- Environment
- Health
- Energy
- Cultural heritage
- Safety



Six sites all over Italy

NUMBERS (2013):

- **167** JCR/ISI publications
- **70** research projects
- about **21 M€** budget

STAFF AND FACILITIES:

About **160** researchers, **50** temporary employees, technicians and administration. Optical, mechanical and electronical workshops



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Spectroscopy & PHotonics for Environmental Research and Earth Studies (www.ino.it/SPHERES): Expertise and Applications

Concentration measurements of dangerous species:



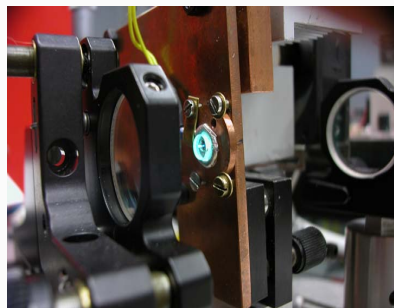
Trace gas measurements in the upper troposphere/lower stratosphere: **CO, CH₄, H₂O, HNO₃, etc**



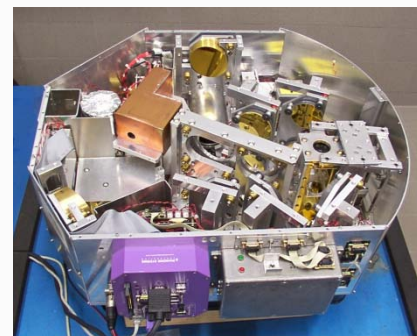
Fluorescence LIDARs (FLIDAR) for the monitoring of ecosystems, vegetation, water bodies



Telemetric-LIDAR for measuring PM10 at 10-100 m distance



Studies on novel solid state laser materials (Yb and Ce doped)
Development of solid state laser sources



FTS for vertical sounding of the atmosphere for 3D maps of composition (H₂O, CO₂, O₃, N₂O, CH₄, etc.) and temperature

Staff: 9 researchers, 1 technician, three guests