ONERA DOTA

ONERA skills in hyperspectral imagery

X. Briottet

Xavier.Briottet@onera.fr

ONERA

THE FRENCH AEROSPACE LAB

retour sur innovation

ONERA Airborne Sensors Facilities

Hyperspectral camera HYSPEX (Noe-No)

- Range: 0.4-2.5 µm
- GSD: from 0.5 to 2m

Multispectral and Panchromatic VIS camera (40 Mpix) ***PELICAN***

- GSD 10 cm
- Bandwidth: selected per application

Multispectral MWIR LWIR camera TIMBRE-POSTE

- GSD 10 cm
- on board a helicopter

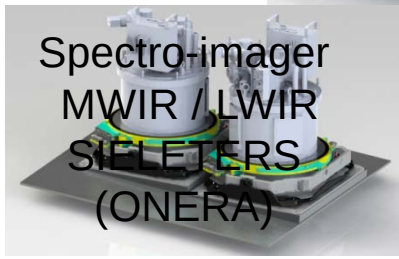
SYSIPHE : Système imageur hyperspectral IR

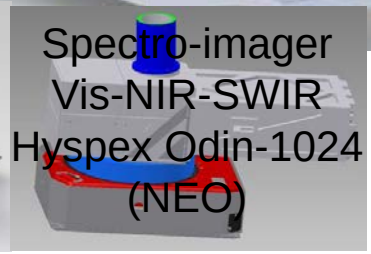
First images in 09/2013

- GSD: 50 cm @ 2000 m
- Spectral range: 0.4-2.5µm (6nm) +

+ 3-4.5 µm (20 cm^{-1}) + 8-11.5µm (10 cm^{-1})

- Aircraft: only DO228 DLR





Each sensor has its own on ground processing segment: STAD, LIMA

On ground facilities LIMA – validation

Ce projet a été cofinancé par l'Union européenne.
L'Europe s'engage en Midi-Pyrénées avec le Fonds européen de développement régional.

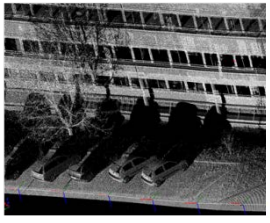
Set of ground facilities for validation


- LIMA-VT-Atmo: atmosphere characterization:

Fields of wind, aerosols, water vapor,
3D temperature profils, flux…


- LIMA-VT-Ground: soil characterization

measure of soil properties: spectral optical property
from visible to thermal infrared, temperature, moisture, etc…




- LIMA-VT-3D: 3D telemeter measurement

including « fullwave » (including under canopy)

- LIMA-VT-Targets: in-flight calibration

for radiometric and geometric calibration

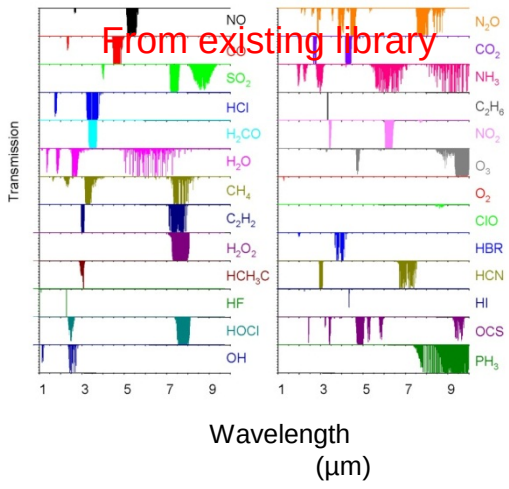
Logistic to deploy our facilities:



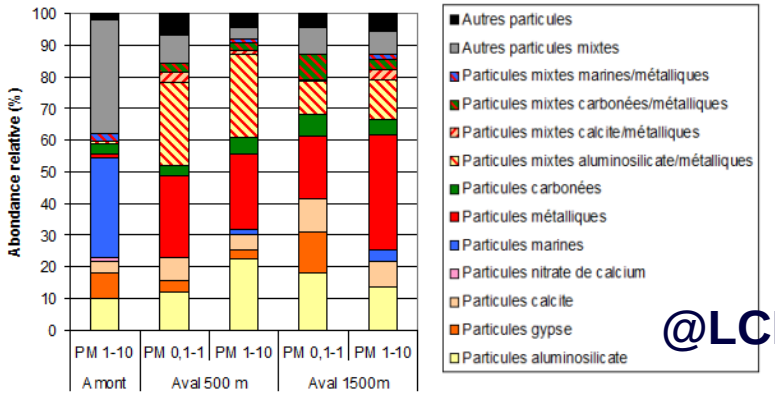

Spectral Data base

Atmosphere

Gas

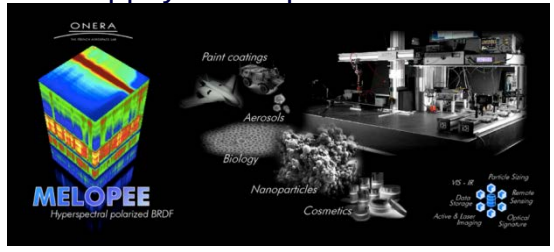


Aerosols

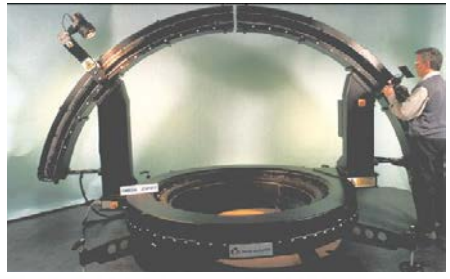


@LCPC

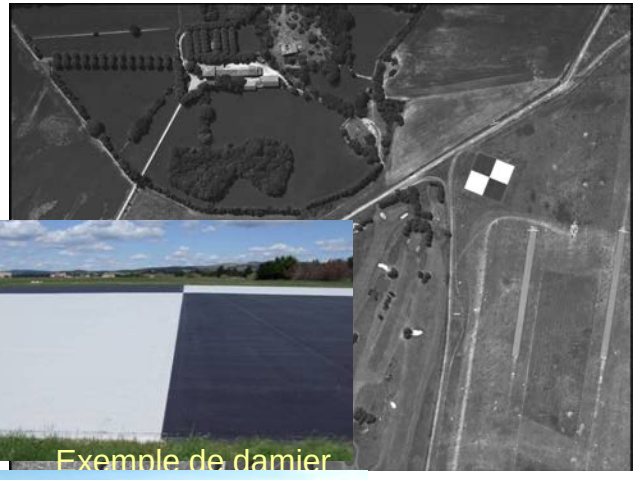
Chemical / µphysical / optical characterization



Materials



Thank you for your attention



Exemple de damier

- Banc CHAMELEON déployé pour mise au point

Banc mécanique dans sa caisse

ANR ECLIPS