

Practical on retrieval (DOAS)

Michel Van Roozendael, BIRA-IASB

ATC14, 27-31 October, Jülich, Germany

Mapping this year ozone hole using GOME-2

Step 1:

Setting-up QDOAS for GOME-2 instrument and ozone slant column fitting

- Set-up wavelength calibration
- Set-up analysis window
- Run test analysis and visualize fitting results using the QDOAS GUI

Mapping this year ozone hole using GOME-2

Step 2:

Process one full orbit of recent GOME-2 Lv1 data using `doas_cl` (approx. 3 min), and visualise results using IDL plotting facilities:

- O₃ slant columns
- Effective temperatures
- AMF (geometrical approximation)
- Ring effect
- O₃ vertical columns...

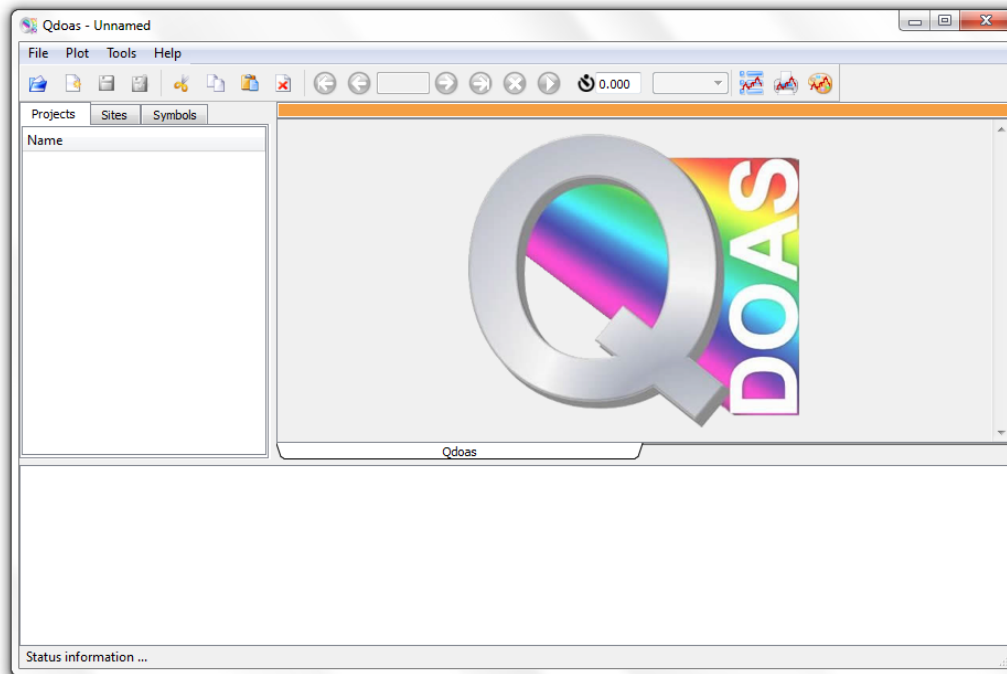
Mapping this year ozone hole using GOME-2

Step 3:

Map one full day of O₃ VCDs (slant columns pre-processed off-line), and compare with operational data sets:

- GOME-2B
- GOME-2A
- GOME-2A + GOME-2B
- How different are the products? Discuss possible causes for differences.

Playing with the QDOAS software



- Load project
- Edit project
- Navigate through the GUI and understand the basic functionalities
- Edit analysis window, play with different options
- Run test analysis and visualise fitting results

Example: the analysis window

Qdoas - /home/michelv/JuelichTrainingcourse/gome-2b-o3Conf_test.xml

File Plot Tools Help

Projects Sites Symbols

Name

- GOME-2B
 - Raw Spectra
 - L1data
 - Analysis Windows
 - o3

Properties of Analysis Window : GOME-2B / o3

Wavelength Calibration: Ref Only

Ref. Selection: Automatic (radio), File (radio)

Fitting Interval: Min 325, Max 335

Display:

- Spectrum and reference (checked)
- Residual (checked)
- Polynomial (checked)
- Predefined parameters (checked)
- Fits (checked)
- Alignment of Ref1 on Ref2 (checked)

Files: Reference 1, Reference 2, Residual (each with a Browse button)

Molecules: Polynomial, Predefined Parameters, Shift and Stretch, Gaps, Output

Molecules	Diff/Ortho	Interp/Conv	AMF	Fit disp.	Filter	Cons. Sc	SCD fit	SCD Init	SCD Delta	SCD lo	SCD min
o3	Differential XS	Convolve lo	None	✓	✓		✓	0	0.001	5e+19	0
o3a	Differential XS	Convolve lo	None	✓	✓		✓	0	0.001	5e+19	0
ring	Differential XS	Interpolate	None	✓	✓		✓	0	0.001	0	0

Help Ok Cancel

Status information ...

michelv : qdoas Qdoas - /home/michelv/Juelic VNC config 22:26

VNC config

- Accept clipboard from viewers
- Send clipboard to viewers
- Send primary selection to viewers

SUSE YaST

```

JuelichTrainingcourse : bash
File Edit View Scrollback Bookmarks Settings Help
Licensed for use by: Royal
IDL> exit
michelv@chuck4:~/JuelichTr
gome-2b-o3Conf_test.xml
gome-2b-o3Conf.xml
michelv@chuck4:~/JuelichTr
IDL Version 8.2.3 (linux x
ons, Inc.
Installation number: 50390
Licensed for use by: Royal
IDL> .compile showDOAS.pro
% Compiled module: NUM2STR
% Compiled module: PLOT_CO
% Compiled module: PROCESS
% Compiled module: PLOT_O3
% Compiled module: PLOT_O3
IDL> plot_o3map,1
% LOADCT: Loading table Ma
% Compiled module: MAP_SET
% Compiled module: MAP_COM
% Compiled module: MAP_GRO
% Loaded DLM: PNG.
72.102904
IDL> exit
michelv@chuck4:~/JuelichTr
gome-2b-o3Conf_test.xml
gome-2b-o3Conf.xml
michelv@chuck4:~/JuelichTr
1. O3scd.png 3. AM
2. effective_T.png 4. L
3. I. AMFvsAMFcorr.png 4. o
michelv@chuck4:~/JuelichTr
gome-2b-o3Conf_test.xml
gome-2b-o3Conf.xml
michelv@chuck4:~/JuelichTr
    
```

michelv - Dolphin

File Edit View Go Tools Settings Help

Back Forward Up Icons Details Columns Preview Split

Places Home Network Root Wastebin

/home/michelv

Name	Size	Date
archive	3 items	23/10/2012
Desktop	8 items	27/03/2014
doc	1 item	09/01/2008
documents	5 items	28/03/2013
ftp	2 items	05/12/2008
GOME2B	13 items	27/01/2013
job_offer_uvvis	4 items	27/06/2011
JuelichTrainingcourse	6 items	24/10/2014
input	1 item	24/10/2014
L1data	1 item	24/10/2014
new functions	2 items	24/10/2014
output	12 items	27/10/2014
gome-2b-o3Conf_test.xml	1.5 KiB	25/10/2014
gome-2b-o3Conf.xml	1.5 KiB	23/10/2014
readme.docx	1.4 KiB	23/10/2014
showDOAS.pro	2.2 KiB	23/10/2014
Mail	35 items	27/10/2014

Information Home

Modified: 27/10/2014 22:18
Type: Folder

16 Folders, 8 files (383.9 MiB)