

Data delivery issues Validation reference set* Scientific products

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Types of SCIAMACHY products

- Level 0 : Raw data
 - SCI_NL__0P....N1
- Level 1 : Calibrated spectra
 - 1b : SCI_NL__1P....N1
 - 1c : SCI_NLC_1P....N1
- Level 2 : Atmospheric parameters
 - NRT: Columns from nadir states: SCI_NL__2P....N1
 - Meteo: Ozone columns nadir states: SCI_RV__2P....N1
 - OL: Nadir columns and profiles from Limb: SCI_OL__2P....N1

Product Distribution






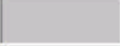
- L0 – L1b:
 - Satellite link, (Kiruna orbits)
 - IUP Bremen, DLR, KNMI, Astrium
 - Tapes (partly consolidated products)
 - Institutions involved in monitoring/calibration
- Level 2
 - CD-ROM (some early products)
 - FTP Server (Kiruna orbits):
 - NRT (Oct 02 -): `ftp://scia2usr:scia2usr@ftp-ops.de.envisat.esa.int`
Structure recently changed changed without notice!!!
 - Meteo (Sep 02 -): `ftp://meteo_nb:meteo_nb@ftp-ops.de.envisat.esa.int`
- Verification orbits: -> Verification subgroup (Level 1B/2)

NRT Products

	Product ready for validation
	Usefull values with known problems
	Values far beyond the anticipated accuracy
	Useless values (Zero, negative or orders of magnitude wrong)
	Not available yet
	Unknown






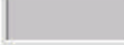
Version	Availability	UV/vis						IR					UV/IR	
SCIA/3.52	CD-ROM 07-08/02	O ₃	NO ₂	BrO	SO ₂	OCIO	HCHO	H ₂ O	N ₂ O	CO	CO ₂	Ch ₄	Clouds	AAI
SCIA/3.53	FTP 10/02-12/02	O ₃	NO ₂	BrO	SO ₂	OCIO	HCHO	H ₂ O	N ₂ O	CO	CO ₂	Ch ₄	Clouds	AAI
SCIA/4.00	FTP 12/02-...	O ₃	NO ₂	BrO	SO ₂	OCIO	HCHO	H ₂ O	N ₂ O	CO	CO ₂	Ch ₄	Clouds	AAI

Meteo Products

	Product ready for validation
	Usefull values with known problems
	Values far beyond the anticipated accuracy
	Useless values (Zero, negative or orders of magnitude wrong)
	Not available yet
	Unknown

Version	Availability	UV/vis
SCIA 3.53	FTP 09/02-12/02	 O ₃
SCIA 4.00	FTP 12/02-...	 O ₃

Offline Products

	Product ready for validation
	Usefull values with known problems
	Values far beyond the anticipated accuracy
	Useless values (Zero, negative or orders of magnitude wrong)
	Not available yet
	Unknown

OL nadir:

Version	Availability	UV/vis						IR				UV/IR		
Not available yet!	-	O ₃	NO ₂	BrO	SO ₂	OCIO	HCHO	H ₂ O	N ₂ O	CO	CO ₂	Ch ₄	Clouds	AAI

OL limb:

Version	Availability	UV/vis			IR						
Not available yet!	-	O ₃	NO	BrO	H ₂ O	N ₂ O	CO	CO ₂	CH ₄	p	T

Content of first validation reference set

- NRT-Products:
 - Columns of O₃, NO₂, BrO, SO₂, OCIO, HCHO
- OL-products:
 - Columns of O₃, NO₂, BrO, SO₂, OCIO, HCHO (nadir)
 - Profiles of O₃, NO₂ and pressure (limb)

Distribution via FTP, details tbd

Available first half of September

Product distribution: Future

???

Validation reference set

- Requirement for validation: reprocessing of all historical data after each processor upgrade
- Problem: current computing power not sufficient to fulfil this requirement
- Compromise: well-chosen subset suitable for validation is reprocessed

Reference set requested by SCIAVALIG

Verification:

- 14 verification orbits

Validation:

- 3000 individual states between July 2002 and April 2003 with colocated validation measurements

Science / PR:

- 16 days in September, all orbits SH only (ozone hole split)

Selection of states

- Input received from validation scientists and ACVT subgroup leaders
- Validation measurement should fall within nadir state or within 'extended' limb state (400 km along-track)
- SCIAMACHY on, and detectors thermally stable
- No state-ID: 1, 2, 9, 10, 23, 28, 29, 33, 34, 35, 41 (highest SZAs); few exceptions
- Priorities:
 - More measurements of several species in one state
 - Balloon/aircraft campaigns
 - NDSC sites
 - Non-NDSC sites

Current situation

- Subset further reduced to 1503 states for the first processing round this Summer, due to computing limitations.
- These 1503 states will also be used to generate scientific level 2 products to be validated.
- Reference states will be listed on validation web site <http://www.sciamachy-validation.org/> in about 2 weeks (including tool to find states closest to your measurement)

Scientific products

Non-operational algorithms for determining atmospheric parameters in the scientific community

Use:

- Verification
- Products not available yet
- New products
- Feedback for operat. products

Limitations:

- 0-1 processing/calibration
- availability of Level 1 products
- "non-operational"

<http://www.sciamachy-validation.org/sv/products/science.html>

Scientific products

- **Chris Sioris, SAO**
 - NO₂ (*works well*), OClO, BrO (*promising*) profiles from limb
 - 280 profiles already retrieved
 - Process profiles for validation (Balloon/aircraft)
- **Hans Shrivjer, KNMI**
 - CH₄ / H₂O : NIR products from channel 8 nadir
 - Results with acceptable quality
 - In principle validation reference dataset can be processed
- **Christian Frankenberg, IUP Heidelberg**
 - CH₄ column
 - Works well
 - In principle validation reference dataset can be processed

Scientific products

Detailed information next talks about:

- DOAS – UV/vis nadir
A. Richter IUP Bremen
- WFM-DOAS – NIR nadir
M. Buchwitz IUP Bremen
- Profiles Limb/occultation
C. v Savigny

Summary

- Operational products currently of limited quality and availability
- Validation reference set defined for reprocessing according to Master-plan (1500/3000 states)
- Various scientific products under development