



A yellow SWIM service dedicated to aviation and ATM by providing early warnings of volcanic SO₂ layer height from TROPOMI and IASI sensors

BIRA	Hugues Brenot, Nicolas Theys, Christophe Lerot, Jeroen van Gent, Michel Van Roozendael
Eurocontrol	Scott Wilson
Rolls-Royce	Rory Clarkson
ULB	Lieven Clarisse
SATAVIA	Adam Durant, Sheri Smith
INGV	Giuseppe Salerno, Stefano Corradini
Univ. Padova	Riccardo Biondi
KSAW	Klaus Sievers

D3363 | EGU2020-15249

4 May 2020



Early warnings of volcanic SO₂ height

Operational alert Products for ATM via SWIM (OPAS)



- Contribution of a new product (SO₂ height from TROPOMI sensor) to an existing Early Warning System – EWS (SACS/EUNADICS-AV)



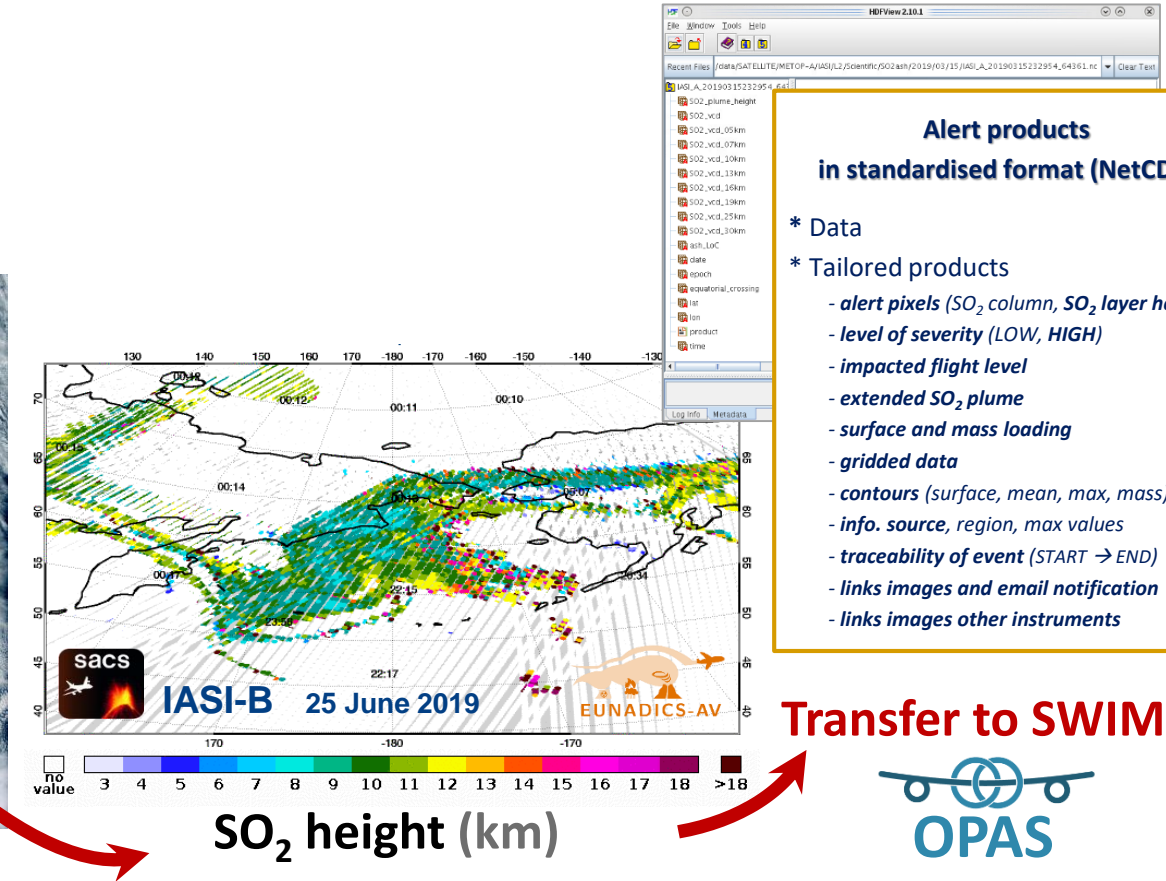
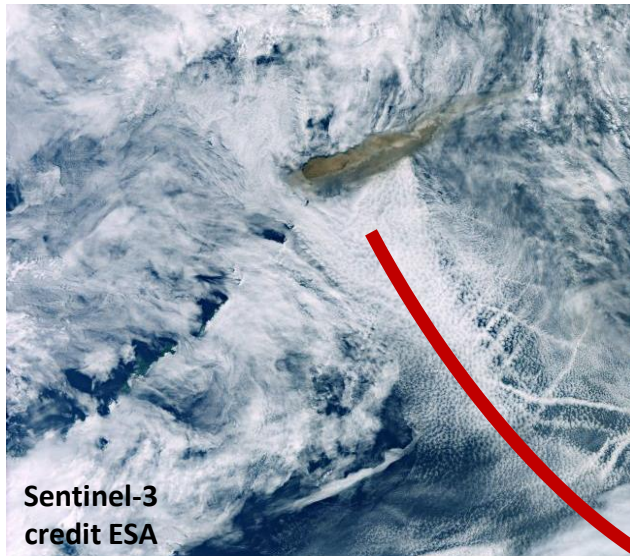
<http://sacs.aeronomie.be>

<http://www.eunadics.eu>



Operational alert Products for ATM via SWIM (OPAS)

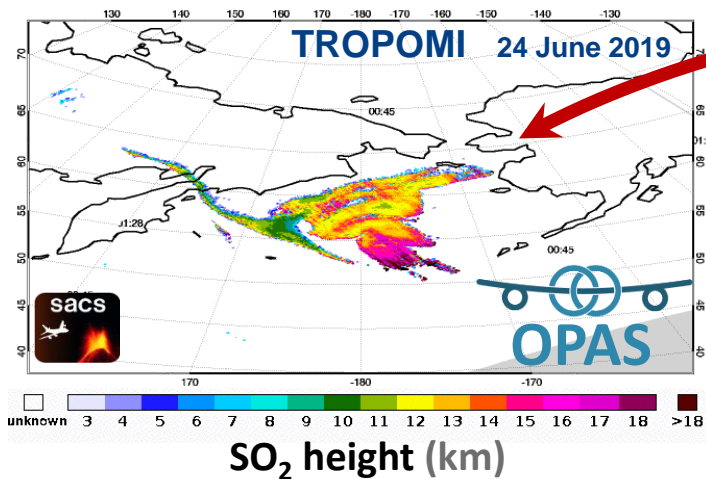
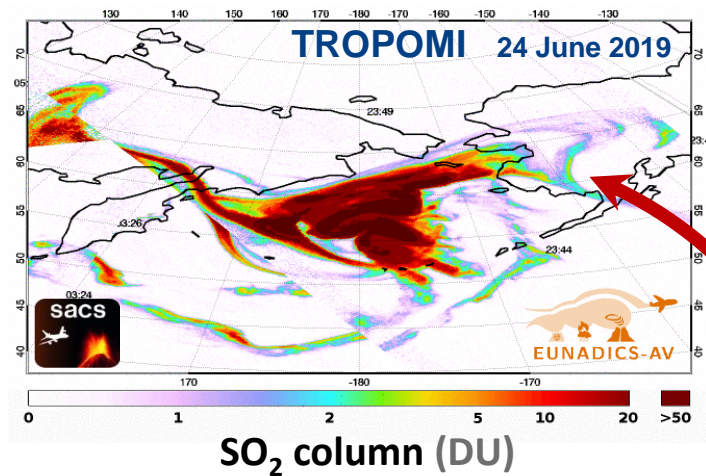
Raikoke eruption in June 2019



- NRT transfer of alert products (SO_2 height) to **SWIM**
([System Wide Information System Management](#))

SO₂ alert product from TROPOMI

- operationnal run of SO₂ layer height and alert products from TROPOMI



Recent Files: /sacs/so2proc.new/OPAS/tropomi.so2lh.archive/SO2_201906220042_201906230411_LNK_TROPOMI.nc

SO2_201906220042_201906230411_LNK_TROPOMI.nc

- AEROSOLS
- CLOUD_PROPERTIES
- FLIGHT_LEVELS
- GEOLOCATIONS
- ID_SOURCE_ALERT
- LINKS
- SO2
 - SACS_regions_alerts
 - SO2_VCD
 - SO2_VCD_error
 - SO2_VCD_improved
 - SO2_alert_level
 - SO2_contours
 - SO2_gridding
 - SO2_height
 - SO2_height_error
 - SO2_height_mean
 - SO2_height_quality
 - SO2_mass
 - SO2_mass_improved

SO2_alert_level at /SO2/ - SO2_201906220042_201906230411_LNK_TROPOMI.nc

Text

Data selection: [0] ~ [0]

0 HIGH

SO2_mass_improved at /SO2/ [SO2_201906220042_201906230411_LNK_TROPOMI.nc]

Table

0-based

0	1116.8021
---	-----------

SO2_height at /SO2/ [SO2_201906220042_201906230411_LNK_TROPOMI.nc]

Table

0-based

26434	14.74
26435	15.3
26436	15.2
26437	14.84
26438	15.13
26439	14.7
26440	14.4
26441	14.65

SO2_height (22409954, 2)

32-bit floating-point, 124650

Number of attributes = 6

DIMENSION_LIST = 1-22407665

_FillValue = -999.0

coordinates = latitude longitude

long_name = SO2 layer height considered for estimating the interpolated SO2 VCD

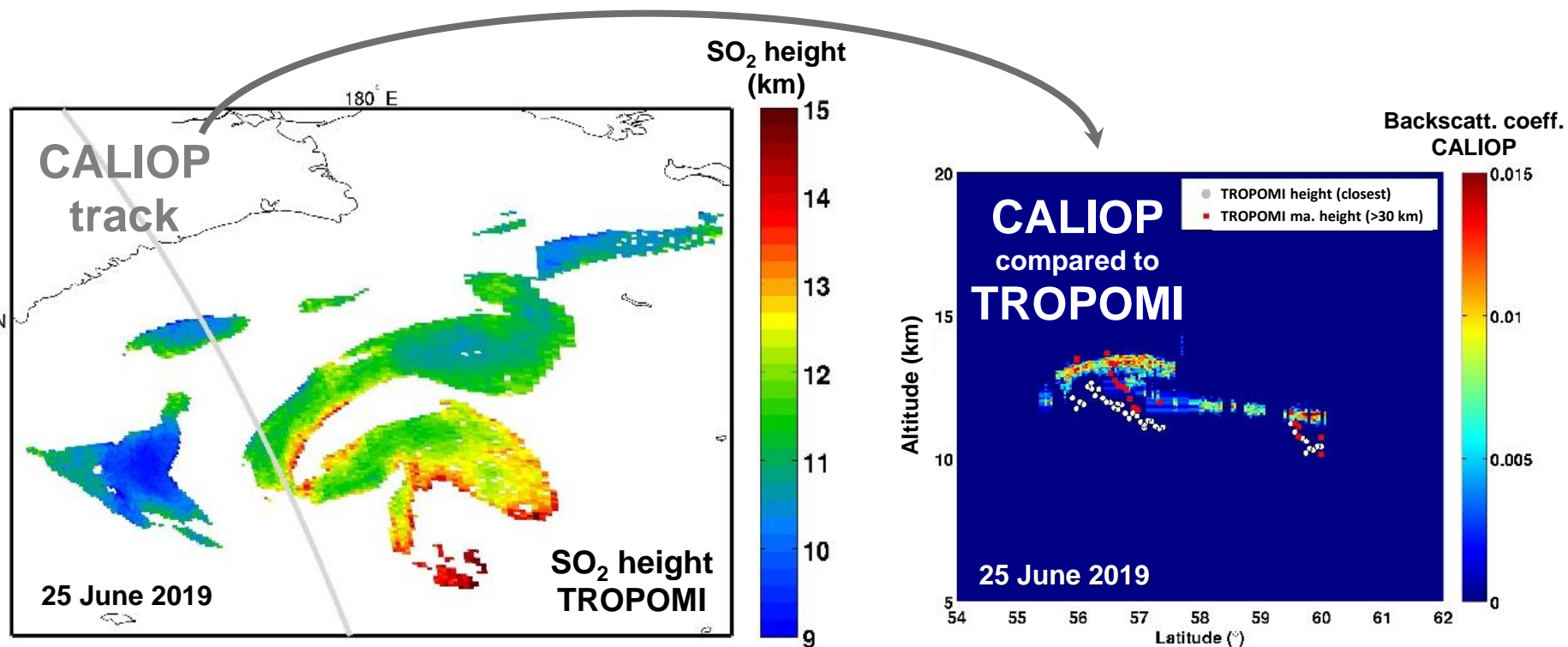
standard_name = SO2 LH (layer height)

units = km

Log Info Metadata

Early warnings of volcanic SO₂ height

- Validation of SO₂ layer height from TROPOMI





SO2 layer height alert product from OPAS

D3363 | EGU2020-15249

4 May 2020

Thank you



This network has received funding from the SESAR Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 783287.



Founding Members



The opinions expressed herein reflect the author's view only.

Under no circumstances shall the SESAR Joint Undertaking be responsible for any use that may be made of the information contained herein.