VALIASI fellowship:

VALidation of IASI Level 2 products

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EUMETSAT fellowday, 07 March 2016

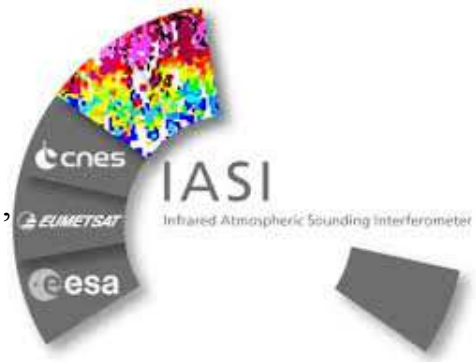
MOTIVATION

To date…

- Validation activities only for short periods (e.g., Keim et al., 2009; Viatte et al., 2010; Schneider and Hase, 2011).

- Specific Trace gases

- Different measurement techniques (e.g., Brewer spectrometer, meteorogical radiosondes, FTS,…)



IASI L2 products: H_2O, CO, CH_4, N_2O, CO_2

VALIASI proposes…

-Validation of the historical time series.

- All trace gases

-Just one single measurement technique

AIM Comprehensive validation of IASI level 2 humidity and trace gas (O_3, CO, CO_2, CH_4 and N_2O) products by means of ground-based high-quality Fourier Transform Infrared (FTS) spectrometry.

BENEFICTS

· Empirically assessment and documentation of the overall quality of the IASI L2 humidity and trace gas products.

· New insight in the importance of different error sources: latitude dependency, viewing geometry/swath angle, surface emissivity, atmospheric aerosols,…

· Conclusions for further improvements.

REFERENCE TECHNIQUE

Fourier Transform Infrared Spectrometry (FTS)

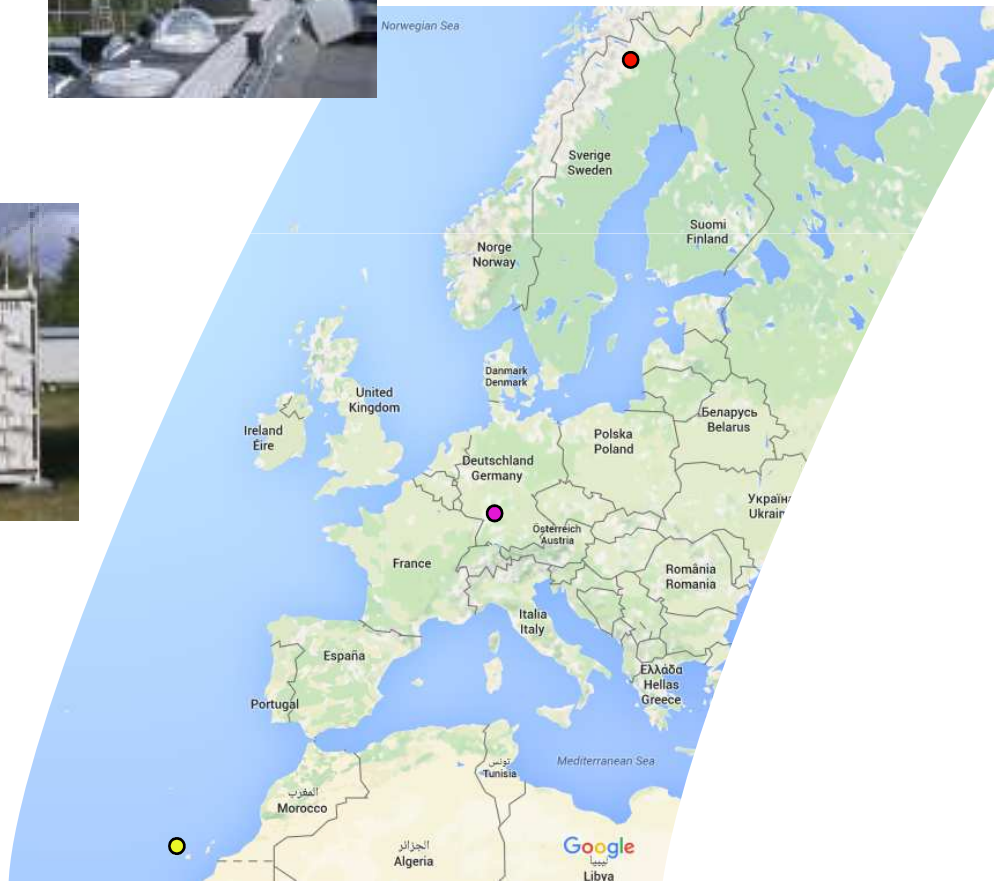
(Schneider et al., 2005; Garcia et al., 2012; Sepulveda et al., 2014)

VALIDATION SITES

- Kiruna (67ºN, 20ºE)

- Karlsruhe (49ºN, 8ºE)

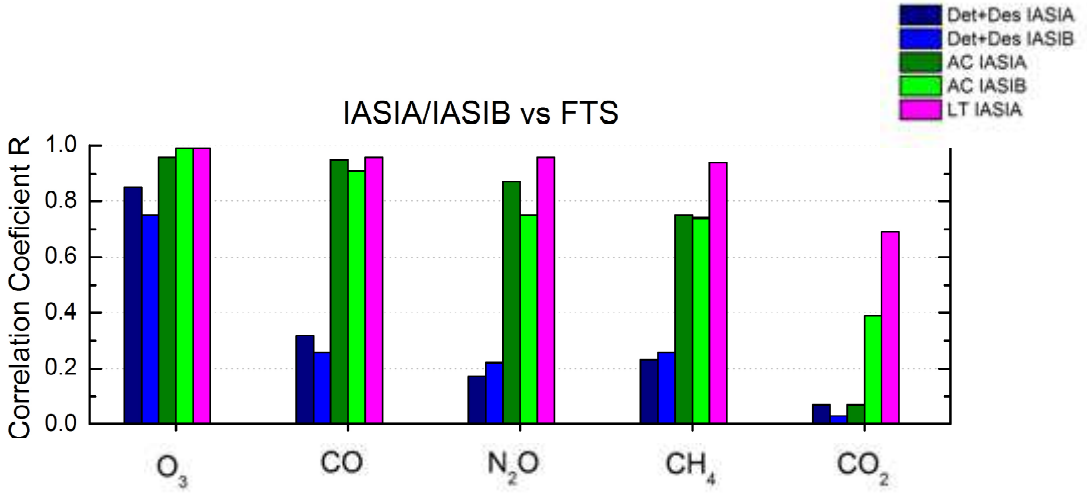
- **Izaña** (28ºN, 16ºW)



- 1 year of VALIASI fellowship (Sven Külh 2013/14)

  - Development of the validation methodology

  - Preliminary results for Izaña site:



Atmos. Meas. Tech. Discuss., 8, 13729–13778, 2015
www.atmos-meas-tech-discuss.net/8/13729/2015/
doi:10.5194/amtd-8-13729-2015

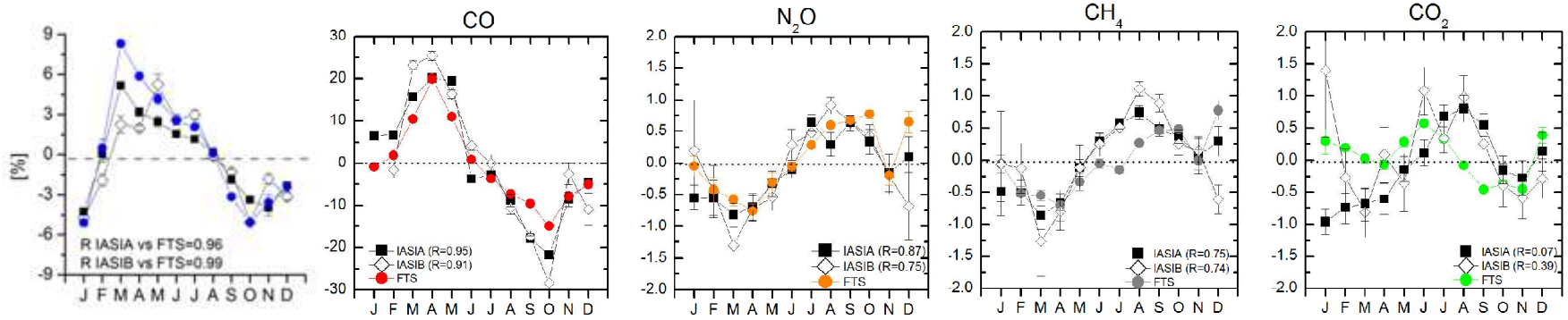
Atmospheric Measurement Techniques Discussions

This discussion paper is/has been under review for the journal Atmospheric Measurement Techniques (AMT). Please refer to the corresponding final paper in AMT if available.

Consistency and quality assessment of the Metop-A/IASI and Metop-B/IASI operational trace gas products (O_3, CO, N_2O, CH_4 and CO_2) in the Subtropical North Atlantic

O. E. García[1], E. Sepúlveda[1], M. Schneider[2], F. Hase[2], T. August[3], T. Blumenstock[2], S. Kühl[1], R. Munro[3], A. Gómez-Peláez[1], T. Hultberg[3], A. Redondas[1], S. Barthlott[2], A. Wiegele[2], Y. González[1], and E. Sanromá[1]

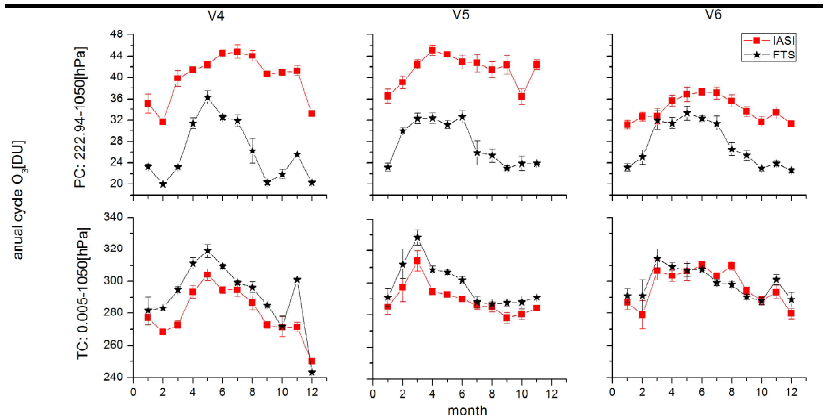
[1]Izaña Atmospheric Research Centre (IARC), Agencia Estatal de Meteorología (AEMET),



- VALIASI fellowship (2016-2018): Eliezer Sepulveda

- Validation on quasi-near real time.

- Estimation and documentation of the quality of the IASI A & B L2 product for versions V4, V5 & V6. Example for O_3.



- Extension of the intercomparison and validation study for middle and polar latitude sites (Karlsruhe and Kiruna sites, respectively)

- Error source analysis. E.g.: influence of the IASI´s swath angle (viewing geometry), uncertainties of surface emissivity,…

- Dissemination of results: creation of VALIASI webpage and publications

THANK YOU FOR YOUR ATTENTION

Acknowledgments:

- O.E. Garcia, A. Gomez-Pelaez, A. Redondas, P. M. Romero-Campos, E. Sanromá

-T. August, T. Hultberg

- M. Schneider, F. Hase, T. Blumenstock

- A. de Frutos