Alessandro Burini

- Ph.D. in Earth Observation (Tor Vergata University – 2005-2009) Polarimetric SAR, Optical/Radar Data Data Fusion and Algorithm Development
- M.S. in Telecommunication Engineering (Tor Vergata University – 1999-2004) Radar Systems, Satellite Telecommunications, Antennas and Electromagnetic Fields.

Working Experience:

- 2014- ? – RHEA support to IDEAS+ (TASK 3) – Support to ESA TO for Cal/Val related projects (Cal/Val Portal, EVDC, etc..) Algorithm and tool Development, analysis of data and scientific support to Cal/Val activities.
- 2011-2014 – RHEA support to IDEAS Contract – Management of Cal/Val Portal, support to ESA TO for EVDC project
- 2009-2011 – RHEA support to Frame Contract (Task 6) – Management of Cal/Val Portal and support to ESA
- 2004-2009 – Geo-K (EO SME Company) – Project Manager, Algorithm Developer for EO products, GIS, etc…

Publications

- 3 peer reviewed papers
- 25 conferences

Skills:

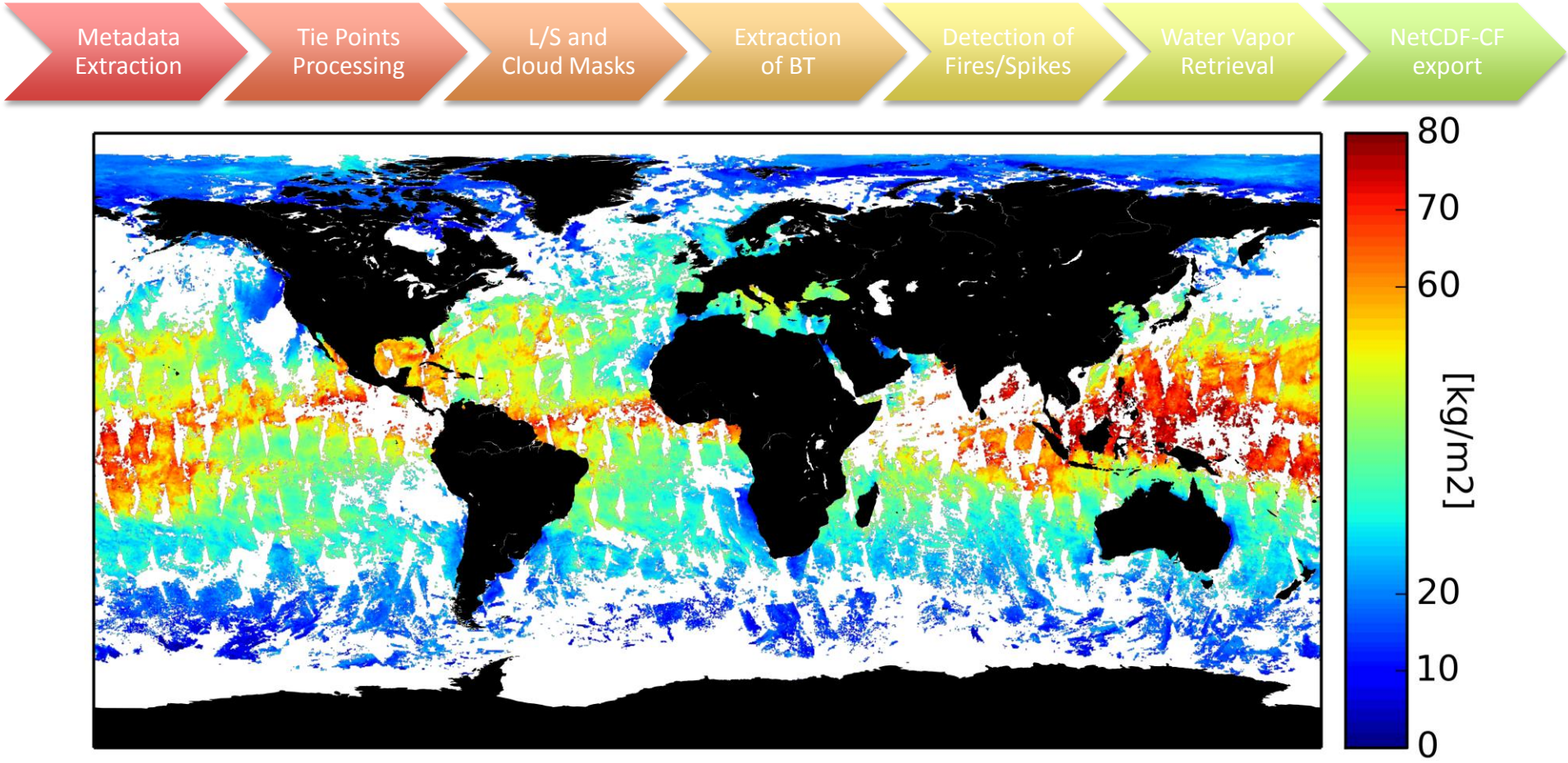
- Earth Observation – Multi platform and across domain experience
- Calibration and Validation
- Algorithm development
- Data handling and processing
- Programming languages (Python, IDL, C) and Interface with SO (linux, Unix)
- Cross OS (Linux, Mac, Windows)
- Databases and geographic database (postgres + postgis)
- Processing of large amount of data and parallel processing.

What I do in Task 3?

- Management of Cal/Val Portal in terms of content, users, support to workshops, etc…
- TO for mySPPA and Cal/Val Portal Contracts
- TO for EVDC contract (+ testing and debugging of procedures, codes…)
- Support to SnowPEX project – Validation procedures and Case Study
- R&D:
  - AIRWAVE – Design of Processing chain and output formats, management and extraction of data, interaction with Grid Environment
  - IMPETuS – (Intercomparison of MERIS vs SCIAMACHY)
    - Review of literature
    - Selection of Datasets
    - Implementation of routines and debugging
    - Processing strategy
    - Design of algorithm and testing
    - Processing of first datasets and debug
    - Design of routines for the analysis of results
    - Analysis of results
    - Publications

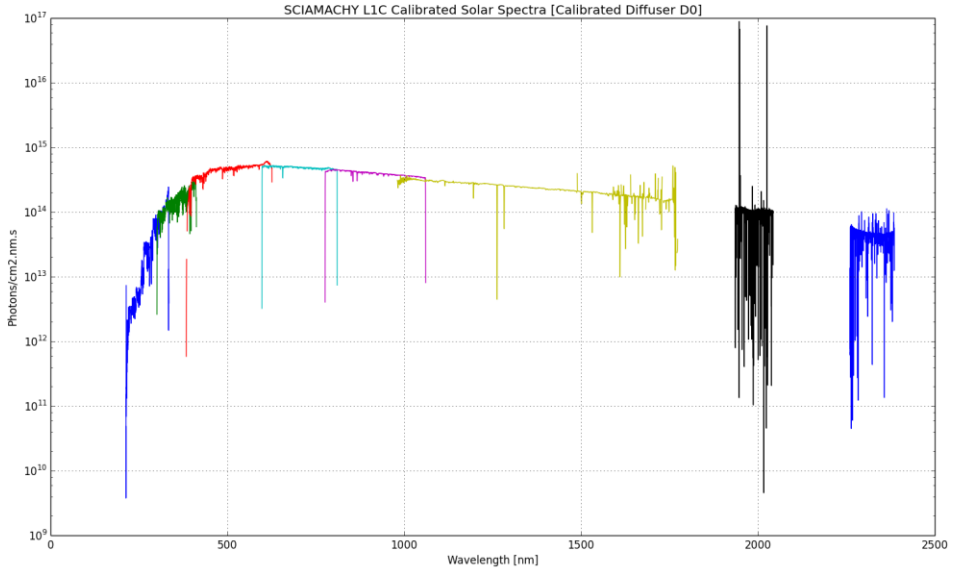
AIRWAVE

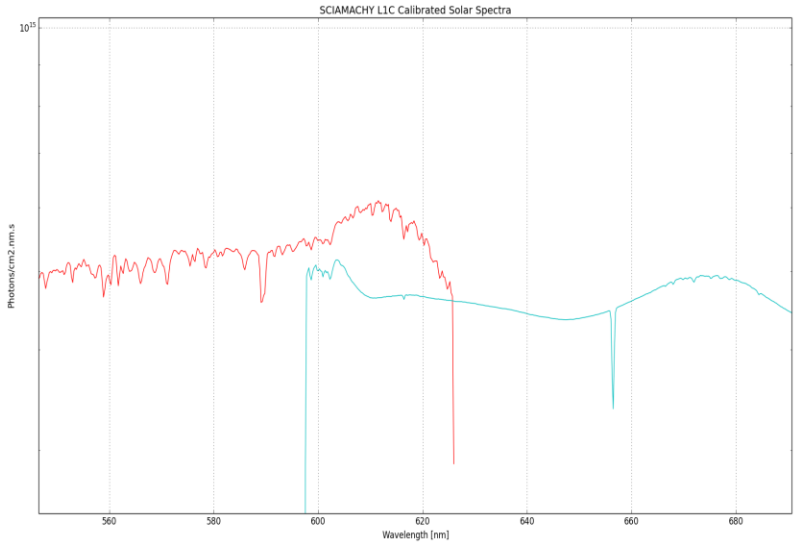
- Retrieval of Total Column Water Vapor by means of ATSR data. Algorithm invented by S. Casadio (in collaboration with CNR-Bologna, Italy)
- Design and Implementation of the Prototype processor – Python
- Bulk processing of ATSR series (25 years of data) : GPOD
- Testing and debug
- Programming approach: try to solve general problems -> Libraries!



IMPETuS!

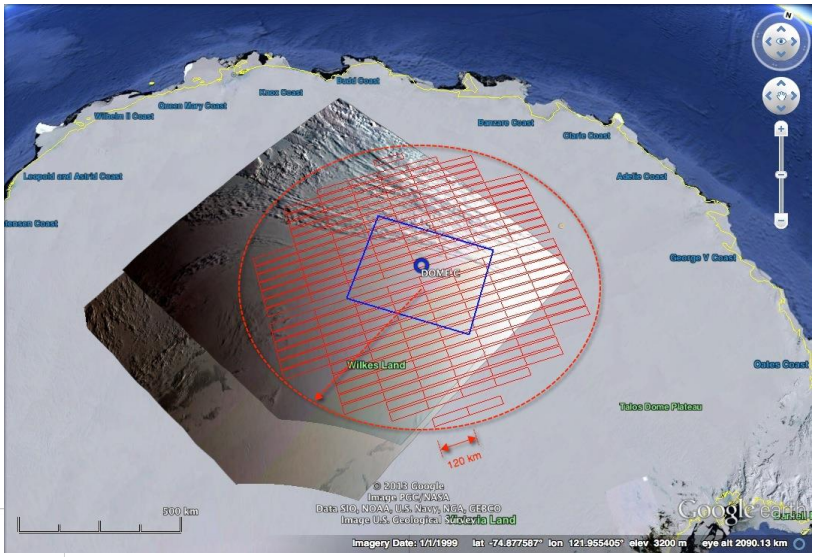
- Activity started in support of CEOS WGCV – To extract spectra of test sites at high spectral resolution (data source SCIAMACHY)
- Main Objective is to intercompare MERIS and SCIAMACHY (SNO)
- IMPETuS stands for Intercomparison of Multi sPEctral data over Test Sites
- Major Problems:
  - To handle Sciamachy level 1 data is not trivial at all!!! Spectral reconstruction is difficult – Geolocation depends on Integration Time
  - Data Access
  - No tool for managing both data formats at the same time (BEAM, BEAT?)
  - Methodology has to be created from scratch

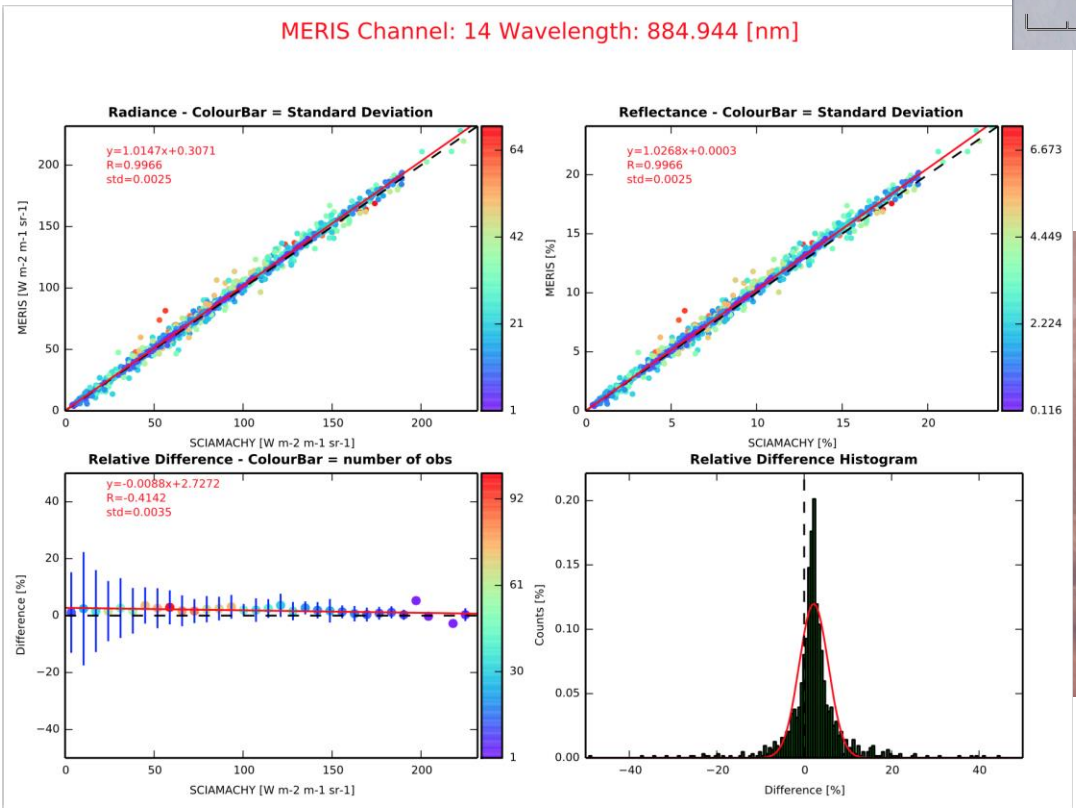


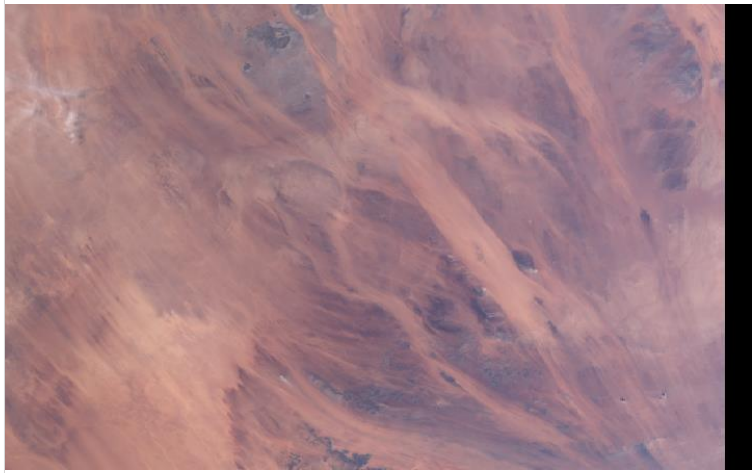


IMPETuS!

- Design of Reading Routines
- Design of a Spectral Library
- Design of Collocation method
- Calibration of SCIAMACHY L1
- Design of exporting routine
- A LOT OF WORK TO DO!!!!!







IMPETuS!

- Processing of 2008 is completed.
- To be processed : 2007 and 2009
- More to do on the analysis of data
- More to do on how to present the statistics
- Publication and report to ESA
- Extension to other instruments (ATSR)
- Collocation engine to be improved (at the moment SNO only) – External Solution?
- The tool can be used to intercompare data over specific test sites.