

L. Belegante¹, G. Ciocan¹, D. Nicolae¹, S. Nicolae^{1,3}, Al. Dandocsi¹, N. Siomos²

¹ National Institute of Research and Development for Optoelectronics - INOE 2000, Remote Sensing Department, 409 Atomistilor street, Magurele, PO Box MG-05, Magurele, 077125, Romania

² Fakultät für Physik, Meteorologisches Institut, Ludwig-Maximilians-Universität, Theresienstrasse 37, 80333 Munich, Germany

³ National University of Science and Technology "Politehnica" Bucharest, Doctoral School of Electronics, Telecommunications and Information Technology, District 6, Bucharest, Romania

CARS

CARS is the ACTRIS reference centre responsible for quality assurance of aerosol lidar measurements across Europe. Through standardized QA procedures, intercomparison campaigns, and continuous performance assessment, CARS ensures the accuracy, consistency, and traceability of aerosol optical products used for atmospheric research and satellite validation activities.

ATLAS QA Software Features

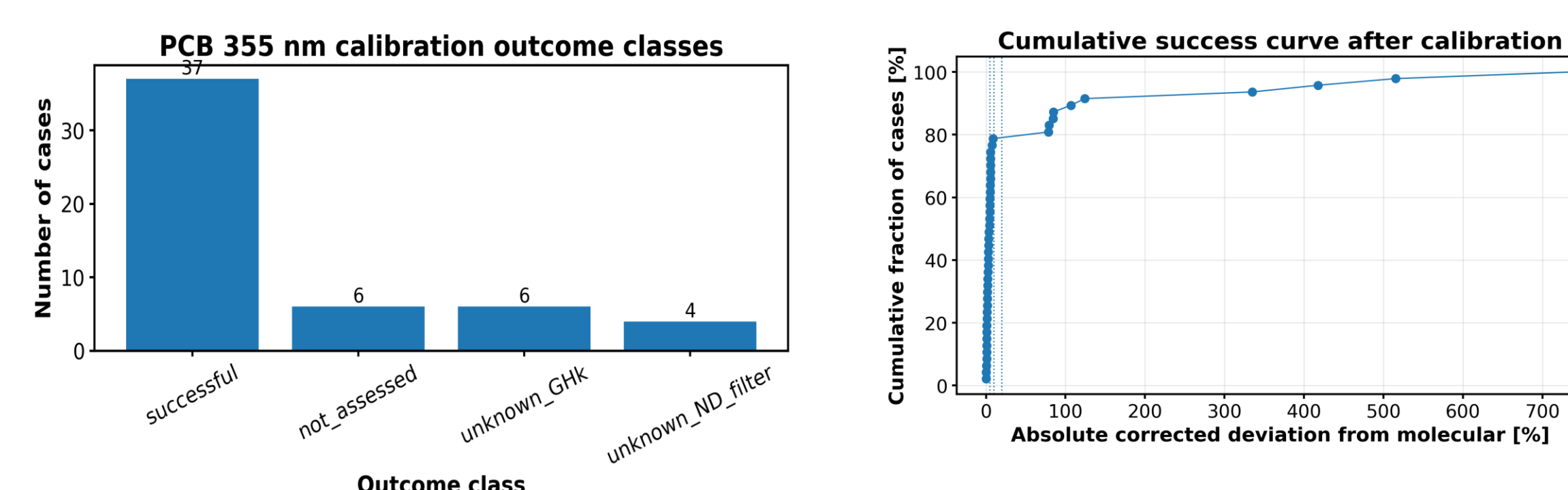
- Telecover test processing and visualization
- Rayleigh Fit analysis and maximum height assessment
- Polarization calibration evaluation
- Depolarization quality assessment
- Instrument performance metrics and statistics
- Automated QA report generation
- Harmonized processing for ACTRIS lidar systems
- Support for station certification and quality control activities

DIVA

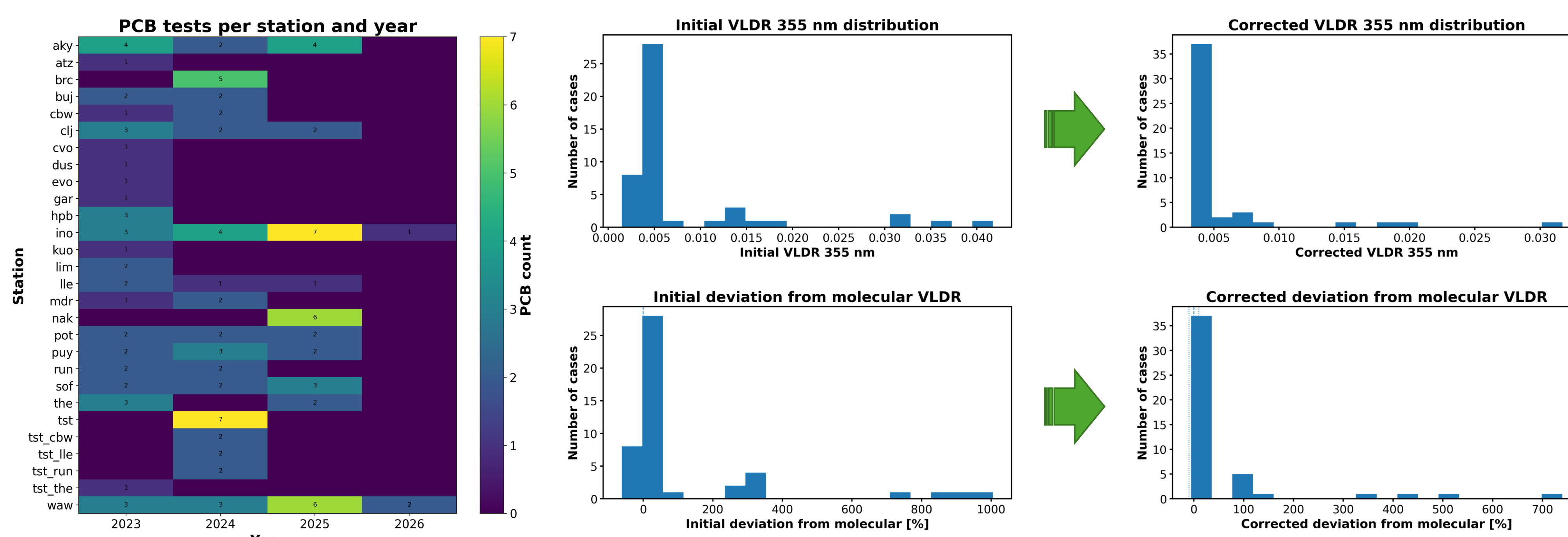
The DIVA platform is a cloud-based collaborative environment developed to support the calibration, validation and scientific exploitation of atmospheric satellite missions. It integrates satellite and ground-based observations and provides tools for data visualization, co-location analysis, intercomparison studies, and satellite product validation.

DIVA Platform Features

- ECMWF atmospheric profiles downloader for ACTRIS stations
- Radiosonde data downloader and visualization
- EarthCARE satellite product downloader
- ACTRIS lidar data access and download tools
- Upload and management of ACTRIS QA results
- Telecover test visualization and analysis tools
- Rayleigh Fit assessment and visualization tools



QA analysis statistics



Conclusions

The statistical analysis performed with the DIVA platform showed that QA activities significantly improved the quality and consistency of aerosol depolarization products. DIVA provides a versatile environment for the calibration and validation of EarthCARE observations, while also serving as an advanced analysis platform for products generated with the ATLAS processing chain.

In addition, DIVA can act as an integrated platform for running ATLAS processing workflows and assessing the quality and performance of lidar measurements, supporting both operational activities and long-term quality assurance.

Discussion

After calibration, 79% of the assessed systems achieved deviations below 10% from the expected molecular depolarization ratio, compared to only about 20% before calibration.

QA Test	TOTAL
Telecover	122
Rayleigh	176
Polarization Calibration	125

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