

EARLINET Data Quality Check Extensive Procedure – v0.0

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V1.1

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1- Introduction

Data quality check procedures for EARLINET/ACTRIS database improved over the time. This document reports the automatic quality check procedures implemented since EARLINET beginning in 2000 until 24 February 2017.

2- On-fly Quality Check v0.0

Some basic automatic tests are applied during the uploading phase for checking that the uploading file is compliant to the EARLINET filename conventions. The procedure in its complex QC_00 performs the following checks :

- 1 - check if file length is 17 or 18 characters
- 2 - check the 1-st and 2-nd file characters are [char]
- 3 - check the 13-th file characters is [.]
- 4 - check the 14-th file characters is [e/b]
- 5 - check the chars from 2 to 11 are decimals [datetime]
- 6 - check the chars from 14 to 16/17 are decimals [wavelength]

3- Off-line physical Quality Check v0.0

No automatic checks are performed. A file-by-file manual quality check has been carried out on July 2013 for the files belonging to the climatological /calipso /dust as defined within EARLINET. The visual inspection of the files was performed and allowed also for the identification of the most common problems in the files.

The following aspects were checked:

Single file

- Optical properties
- Comments
- Additional information provided within the file

More files consistency

- Intensive vertical structures
- Angstrom exponents
- Categories association

The manual inspection of the data is a very long time consuming mechanism and it was recognized that an automatic procedure is needed. This is also crucial for assuring the quality of each data.

4 - Output of QC v0.0 procedure

After the inspection of the data, data not compliant with EARLINET dataset rules have been removed. Where improvements were envisaged for making easier the use of the data, a feedback mechanism was

established with Data Originator. This fostered the improvement of the database. All data published on the CERA database are the results of these procedures.

Data publically available on the EARLINET database since July 2013 are persistently available at the EARLINET/ACTRIS database and through the ACTRIS Data Portal.