

LIDAR PROCESSING PIPELINE AND SINGLE CALCULUS CHAIN RETRIEVAL COMPARISON

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Abstract

Lidar Processing Pipeline (LPP) is an ongoing open-source software project for retrieving elastic lidar signals. It is based on a fully configurable and automated algorithm capable of performing all the steps required for the analysis, from the correction of lidar signals to the retrieval of aerosol optical properties. The first results have been presented, using both synthetic and real lidar signals from different LALINET (Latin American Lidar Network) sites, which demonstrated promising results that are consistent with calibrated aerosol instrumentation. This work presents a comparison with Single Calculus Chain (SCC) using data from the São Paulo lidar station. The SCC is a well-established inversion chain from the European Aerosol Research Lidar Network (EARLINET), under the ACTRIS (Aerosol, Clouds and Trace gases Research InfraStructure Network) infrastructure. Since LPP and SCC are algorithms focused on heterogeneous lidar networks, a comparison of the usage, configuration, and automatization of both systems is provided. In addition, a retrieval comparison is conducted between the two algorithms, demonstrating good agreement between the two systems.

Keywords: lidar inversion; aerosols; Lidar Processing Pipeline.

XII WLMLA Topic: Data processing

ID: Poster P212