DATA QUALITY ASSURANCE AND CHARACTERIZATION OF BELGRADE RAMAN LIDAR STATION

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As an EARLINET (the European Aerosol Research LIdar Network) joining lidar station, Belgrade Raman lidar system has provided aerosol profiling data for potential climatological studies.

In order to assess the performance and the temporal stability of a lidar system a rigorous quality-assurance (QA) program have been developed. The Belgrade Raman lidar system capabilities, and its experimental characterization related to zero bin, analog to photon-counting signal delay, the Rayleigh-fit and telecover tests to check the system accuracy is presented.
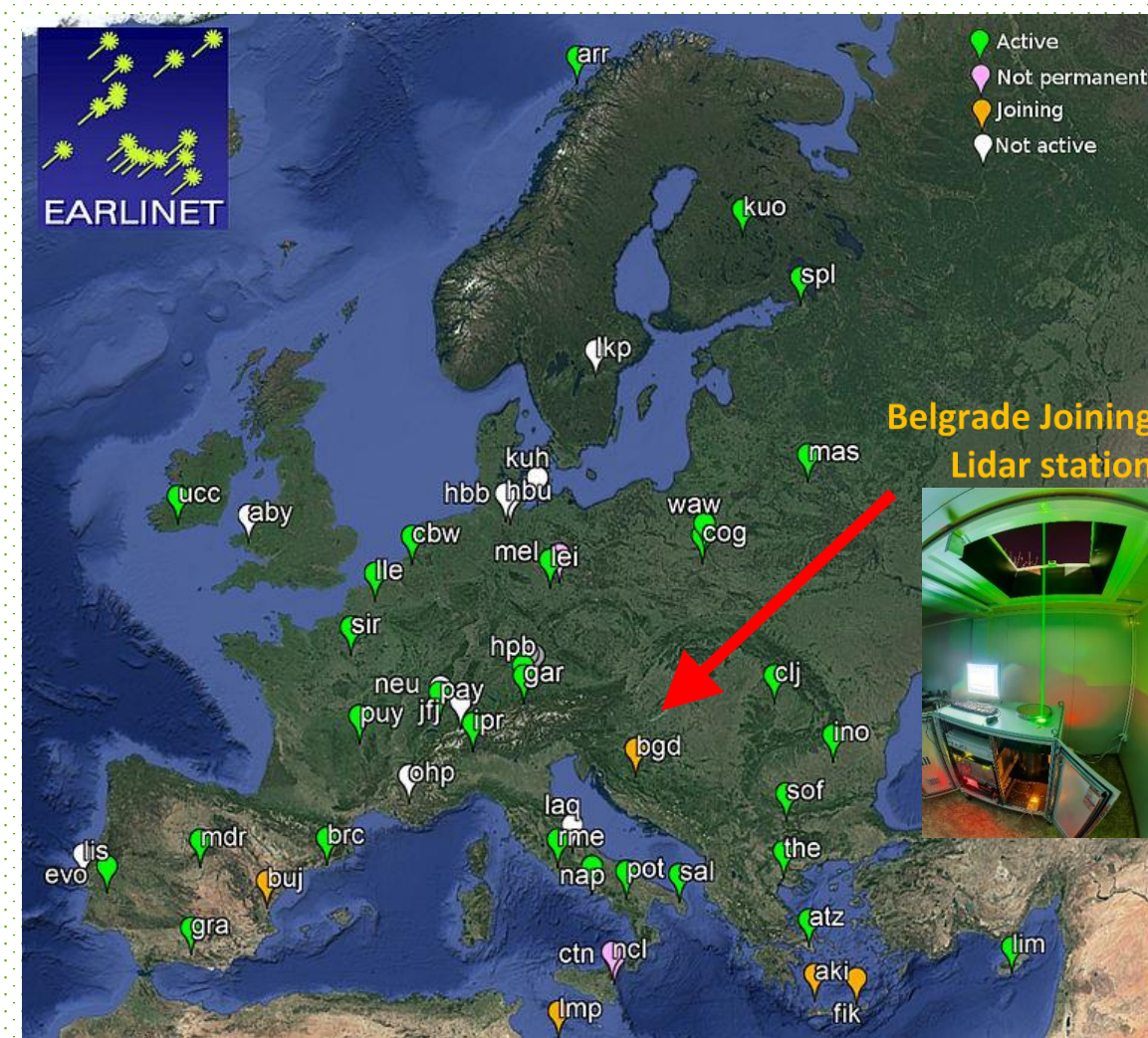

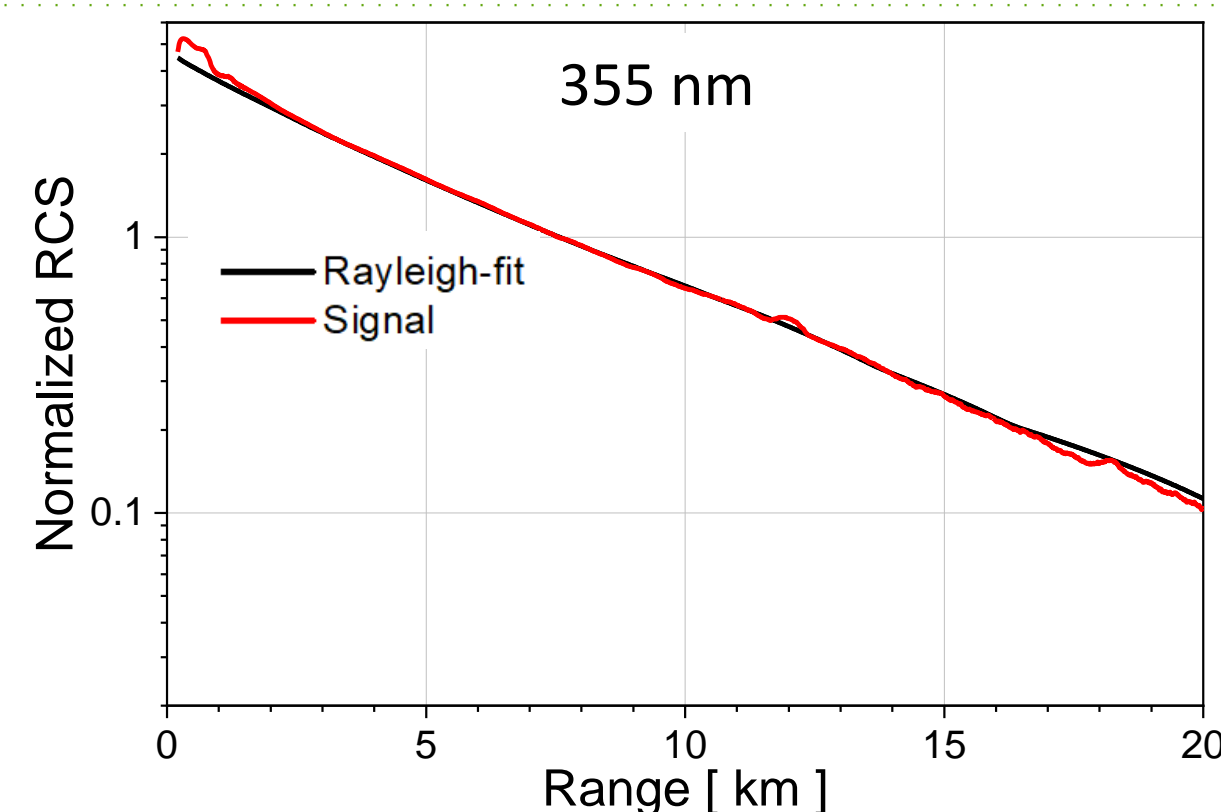**Figure 1.** EARLINET Belgrade joining lidar station

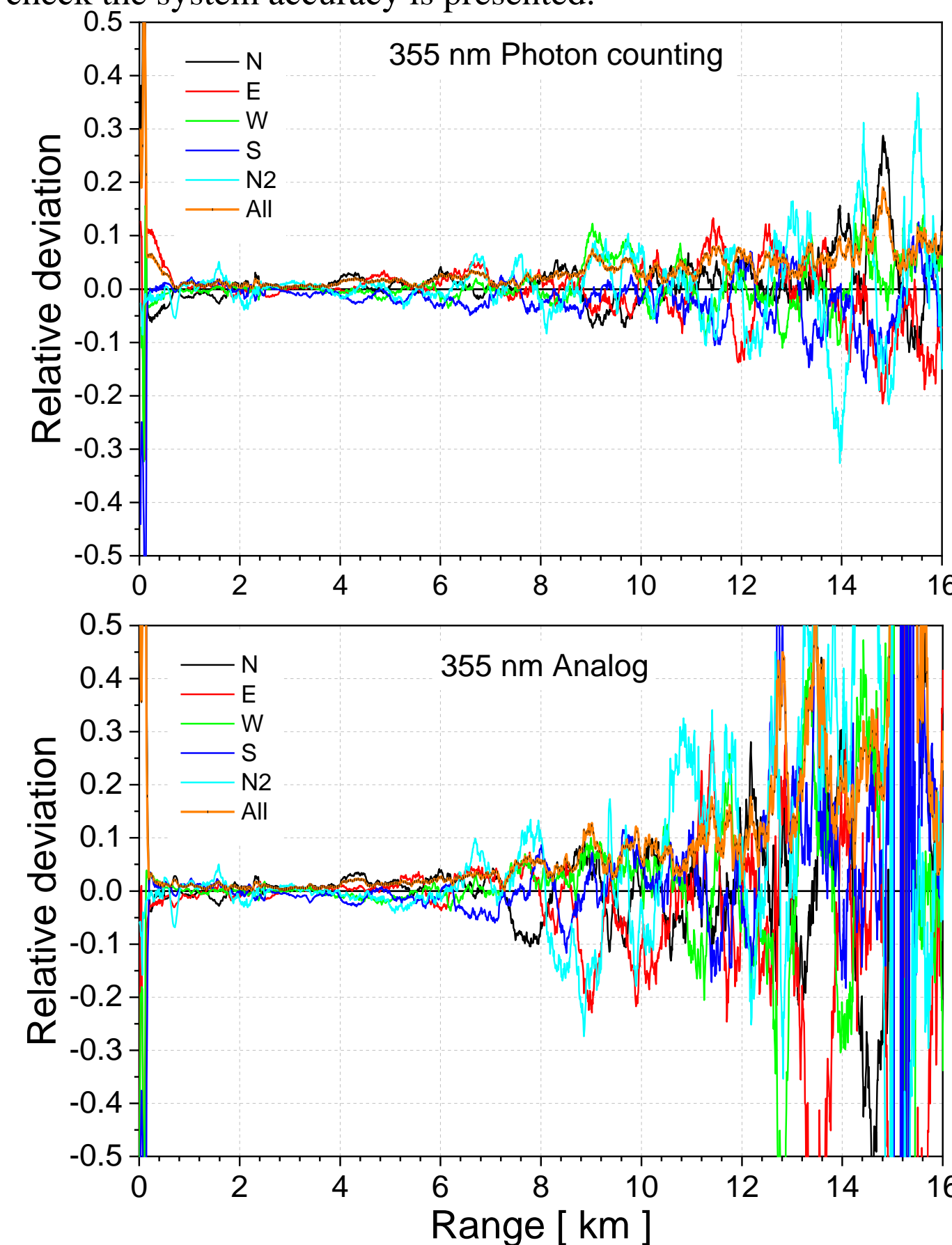**Figure 2**. Raylegh fit for 355 nm elastic channel

Figure 3. The telecover test with 4 sectors and corresponding 355 nm signals
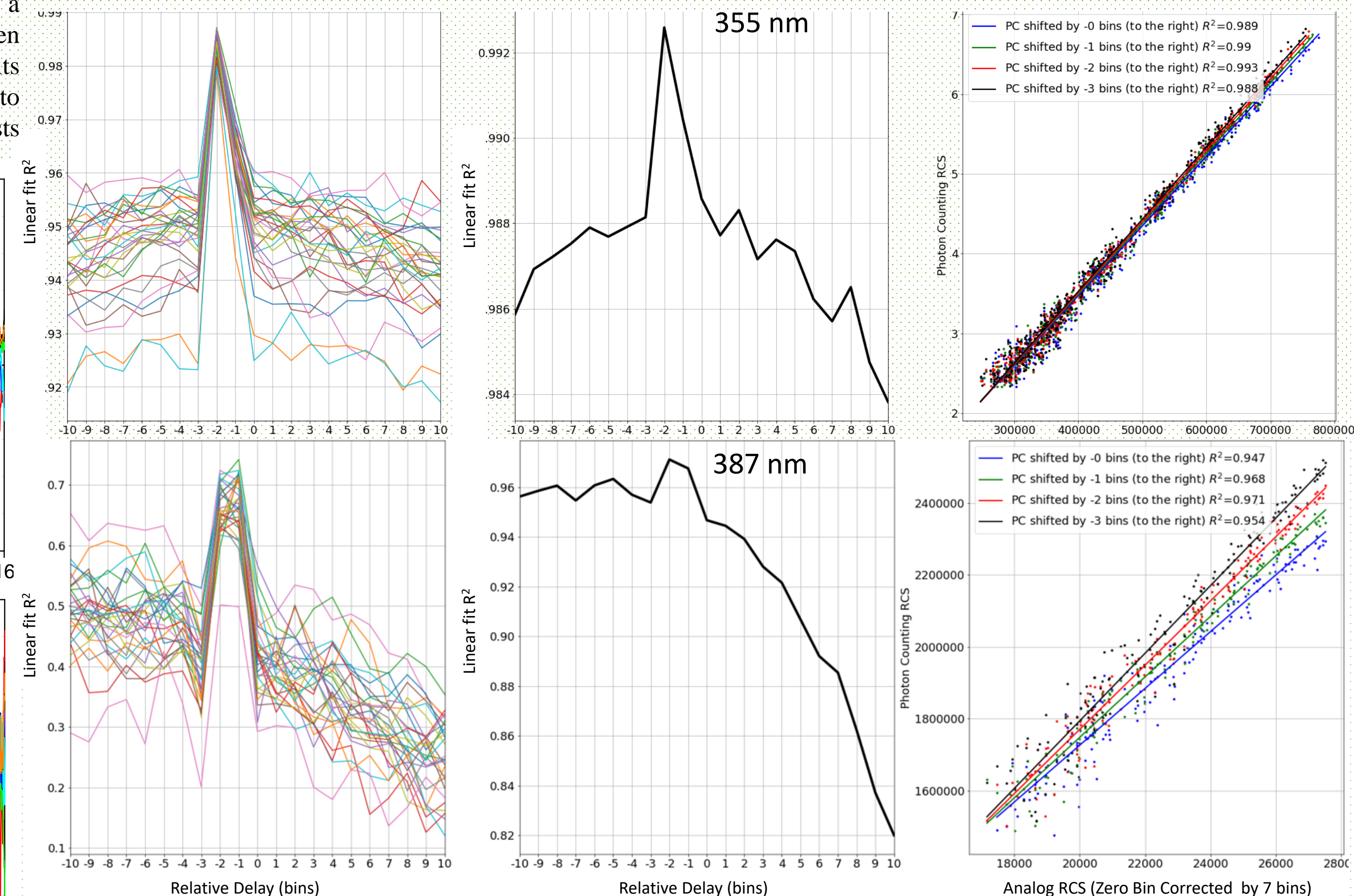

Figure 4. Analysis of the relative delay between zero-bin-corrected Analog RCS and the PC RCS. Measurements of 30 1-minute profiles with 1200 shots each were used. A linear regression between AN and PC data was performed in the gluing region. Correlation coefficient as a function of relative delay between analog and photon counting signals (left). Correlation coefficient as a function of relative delay between analog and photon counting mean signals (center). Fit between the PC RCS and Analog RCS channels (right).