

Short-range measurement of extinction in fog with heterodyne lidar. Céline Klein and Alain Dabas, Météo-France (France).

ABSTRACT

According to studies conducted in the 70s, there exist a stable relationship between optical extinction in the thermal IR and the liquid water content (LWC) in a fog. This relationship opens in principle the possibility to measure vertical profiles of LWC in a fog. From an initial trade-off study, the heterodyne detection was retained. As short range measurements are sought, the use of a bi-static lidar was envisaged. The presentation will show that a monostatic system is preferable. A second aspect of the presentation will deal with the estimation of the extinction coefficient at short range. The usual estimator being biased, a modified one will be proposed.