



Revisiting liquid water content retrievals - "The modified Frisch"

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Due to the large uncertainties in weather and climate prediction models reproducing stratus and stratocumulus clouds and the lack of reliable references, the search for robust and accurate retrievals for liquid water distribution in these clouds has been on the menu in the cloud remote sensing community since decades. Approaches reach from single-sensor and straight forward retrievals to multi-sensor and complex inversion techniques; yet, all having benefits and shortcomings. Frisch et al. (1998) provide a simple retrieval based on radar and radiometer observations, which are standard instruments at remote sensing facilities. Considering the latter as the benefit, the shortcoming of this technique is that it fails when drizzle is present. However, drizzle occurs frequently in stratus and stratocumulus clouds. We will present a modified version of Frisch et al. (1998), the so-called "modified Frisch", providing good estimates of total liquid water content profiles independent of the presence of drizzle.

Frisch, A. S., G. Feingold, C. W. Fairall, T. Uttal, and J. B. Snider, 1998: On cloud radar and microwave radiometer measurements of stratus cloud liquid water profiles. *J. Geophys. Res.: Atmos.*, 103 (18), 23 195–23 197, doi:0148-0227/98/98JD-01827509.00.