Anmeldung eines Themas für eine Bachelorarbeit

Thema Datum	Analysis of water vapor mixing ratio profiles in Mindelo, Cabo Verde from Raman lidar measurements
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Kurzbeschreibung:	Water vapor is a major greenhouse gas and plays a significant role in the Earth's climate. In particular, the spatiotemporal distribution of water vapor is highly variable- typically the total water vapor column is large in the tropics and the opposite for the polar regions. Within the scope of this thesis, high-resolution water vapor observations from a microwave radiometer and radiosondes will be used to determine the water vapor calibration constant for the PollyXT Raman lidar that is located in Mindelo, Cabo Verde. If time allows, a detailed analysis of the vertical structure, temporal development and total water vapor amount in Mindelo, will be studied.
Literatur:	Foth, A., Baars, H., Di Girolamo, P., and Pospichal, B.: Water vapour profiles from Raman lidar automatically calibrated by microwave radiometer data during HOPE, Atmos. Chem. Phys., 15, 7753–7763, https://doi.org/10.5194/acp-15-7753-2015, 2015. Dai, G., Althausen, D., Hofer, J., Engelmann, R., Seifert, P., Bühl, J., Mamouri, R.-E., Wu, S., and Ansmann, A.: Calibration of Raman lidar water vapor profiles by means of AERONET photometer observations and GDAS meteorological data, Atmos. Meas. Tech., 11, 2735–2748, https://doi.org/10.5194/amt-11-2735-2018, 2018. Foth, A., Optimal estimation of water vapour profiles using a combination of Raman lidar and microwave radiometer Ph. D., University of Leipzig, Faculty of Physics and Earth Sciences, vi, 109 pp. Seidel, C., Analysis of water vapour mixing ratio profiles in the Arctic from Raman lidar measurements during the MOSAiC-campaign

	M.Sc., University of Leipzig, Faculty of Physics and Earth Sciences, 74 pp.