

Atmos. Meas. Tech. Discuss., referee comment RC1  
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## Comment on amt-2021-172

Anonymous Referee #1

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Referee comment on "Detection of Sulfur Dioxide by Broadband Cavity Enhanced Absorption Spectroscopy (BBCEAS)" by Ryan Thalman et al., Atmos. Meas. Tech. Discuss., <https://doi.org/10.5194/amt-2021-172-RC1>, 2021

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The authors describe a new instrument for the detection of SO<sub>2</sub> using BBCEAS. Though the application of the BBCEAS method in the wavelength region around 310nm for SO<sub>2</sub> measurements is new, there is no major technical progress compared to previous reports about BBCEAS instruments other than the change of the LED to provide the UV light at the required wavelength. In the paper there is no hint that the application of BBCEAS has a major advantage compared to other methods that are used for atmospheric detection of SO<sub>2</sub>. In fact, a discussion of the performance of the instrument in the context of other techniques is missing. Overall, the description of the instrument and its properties and the discussion are rather sparse and do not show that this instrument provides a major progress. The authors only show investigations of the linearity and limit of detection and a comparison with an established instrument during calibration measurements proving that absolute concentrations are correctly measured for these conditions. The investigation of the applicability of the instrument in ambient air is missing. For these reasons, I do not think that the content of the paper is sufficient to be published in AMT.