

## ***Interactive comment on “A new mobile and portable scanning lidar for profiling lower troposphere” by C.-W. Chiang et al.***

### **Anonymous Referee #2**

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The paper describes a new system that comprises state-of-the-art parts. To my knowledge, there are several scanning lidars already published in the literature as well lidar systems with Raman shifters for aerosols, clouds, and trace gases. For me, the paper doesn't contain neither new information about the quantities to be measured nor the technical realizations that are used.

I'm wondering that the system can measure the mobility? Please, take into account that the mobility is a fixed physical term.

I missed essential technical details of the system as for instance

- power consumption of the whole system,

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- laser details (type, manufacture, ...),
- size of laser power supply,
- size of cooling system,
- size of FOV ...

The reader thinks that Fig. 1 shows the whole system. But I didn't see neither the Raman cells nor the power supply or other supporting parts (cooling system, ...) there?

The reader thinks that the system is auto-controlled ... I'm asking:

- Does the system really run automatically without any touch of an operator?
- Is there really nobody necessary? Does the measurement program start autonomously including starting all subunits according a measurement schedule?
- What is "auto-controlled" by the software?

The formulas can also be found in text books (that could be cited). I agree that basic formulas need to be named. The error analysis is much too short.

What is the difference between the overlapping function (page 173, 7) and the overlap function (page 171, 14)?

Why don't the authors show a profile of beta\_particle? How is the system used in cloud research? Do the authors have a example for cloud research? Why do the authors show only a range-integrated value of SO<sub>2</sub> concentration and don't show a profile of SO<sub>2</sub> concentration?

The English must be improved.

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