Multi-lidar wind resource mapping in complex terrain

by
Robert Menke et al.

Review

General comments

The revised version of the manuscript "Multi-lidar wind resource mapping in complex terrain" by Robert Menke et al. has been greatly improved. The description of the methods now follows a clearer structure and unnecessary parts were removed for more clarity. The intention of the authors to further qualify multi lidar measurements in complex terrain for wind resource assessment is now communicated more clear.

Nevertheless, some minor improvements can further strengthen the paper for more clarity.

1. The objective named in the introduction of the paper ("In this study, we present dual-Doppler lidar measurements and analyze flow structures in observed wind field for different atmospheric conditions") does not communicate the real intention of the paper (as stated e.g. in the title) to qualify multi lidar for wind resource assessment in complex terrain. I suggest rephrasing the second last paragraph in the introduction starting P2L13 to state this objective and the measures to achieve this goal (comparison of lidar data to anemometer data and flow model data).

2. The structure of the paper given at the end of the introduction is not consistent with the actual structure. Sections 2-4 contain methods as stated. Section 5 contains results and some discussions as stated, but with a misleading title ("Data analysis"). Section 6 contains discussions. Section 7 ("Conclusions") contains discussions and conclusions and is not listed in the introduction.

For a clearer structure I suggest to rename Section 5 to "Results" and to shift the few discussion parts from sections 5 and 7 to section 6. The content in section 7 should be limited to a very brief summary and real conclusions.

With these smaller but important changes and the few technical corrections (see below) done, I consider this nice work as ready for publication.

Specific comments and technical corrections

P2L23: Plural: wind fields

P2L23: Plural: ... compared to ~~a~~ WRF-LES simulations …

P3L12: I guess the type of Lidar is "Leosphere Windcube200S"

P3L20: … along the transect …

P3L20: in 80 m height above …

P3L26: below 0.5 % as ~~as~~ …

P6L20: Sentence hard to understand, please revise: As no information, at the point of the model configuration, about the tree height was available, for the modeling domains, a randomly uniformly distributed forest height of 30 m ± 5 m was used.

P9L5: different name convention for Sls used here. Please correct.

P10L10: all four masts

P10L17: … wind speeds in the present study …

P15, caption Table 5: Introducing a second nomenclature for the met masts is not necessary and confuses the reader. Please stick to the original nomenclature.