**WIND ENERGY SCIENCE DISCUSSIONS**

**[WESD]**

Interactive comment

# *Interactive comment on* "Improving mid-altitude mesoscale wind speed forecasts using LiDAR-based observation nudging for AirborneWind Energy Systems" *by* Markus Sommerfeld et al.

**Philip Bechtle**

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Dear Authors,

congratulations for your very interesting and important analysis. I read the paper with great interest. I have one or two questions about the methods which lead to Fig. 3.

First, I am unsure about what you mean by "The continuous line in the left sub-figure represents the Root Mean Square Error (RMSE) of wind speed." This is just a question for clarification... The RMS of what? is it a measure of the temporal variation of the

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measured or simulated wind speed on its own within some interval? Or an estimate of the precision of simulation or measurement (and if that, how is that uncertainty derived?)? Or an RMS of a difference between different quantities? I think the paper would profit if you could explain this in more detail.

The other question, which maybe is connected to the first question, is about the LIDAR uncertainty. Your measurement itself is subject to an uncertainty, and it would be interesting if that would be clearly described.

Thank you very much! Philip Bechtle