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Atmospheric Measurement Techniques Discussions

Interactive comment on "Performance evaluation of an all-fiber image-reject homodyne coherent Doppler wind lidar" *by* C. F. Abari et al.

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Review of the manuscript "Performance evaluation of an all-fiber image-reject homodyne coherent Doppler wind lidar" by C.F. Arabi, A.T. Pedersen, E. Dellwik, and J. Mann

In the case of 1.5-mcm all-fiber coherent Doppler lidar the noise is not white and there is a large noise peak at frequency corresponding to zero radial velocity. Because of this the estimation of small velocities of the wind from measured lidar data can be problematical. In paper of Arabi et al. (2014) the method that solves this problem has been proposed. In this manuscript the authors preset atmospheric experiment results that illustrate the advantages of this method (estimation of the radial velocity from imaginary part of the cross-spectrum between I and Q signal component) compared

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to the method where the radial velocity is estimated from the power spectral density of the signal. The paper is well written and may be of interest to experts in the field of atmospheric and coherent optics. I recommend publication of this paper in journal "Atmospheric Measurement Techniques". Remark: In the manuscript a lot of acronyms and it would be convenient for a reader, if the author will add a list of these acronyms.

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