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Atmospheric Measurement Techniques Discussions

Interactive comment on "A review of turbulence measurements using ground-based wind lidars" *by* A. Sathe and J. Mann

V. Banakh (Referee)

banakh@iao.ru

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Reviewed paper presents the review of published results on estimation of the atmospheric turbulence parameters from wind measurements by coherent Doppler lidars. The results obtained in the last 30 years are analyzed in the review. Publication of this review can be useful for specialists in the atmosphere probing. At the same time there are inexactitudes in the manuscript. In particularly, the following notations can be listed as example of that. 1. If in Eq. (36) is the same as in Eq. (34) of manuscript, then Eq. (36) differs from Eq. (25) in the paper of Smalikho (1995). In the last rather , as it is noted in the manuscript. (The length is set in line 419 of the manuscript). 2. The first term in the right-hand side of Eq. (39) can be neglected as compared with the sec-

ond term under conditions and , where is the azimuth angle separation, is the range (distance from the lidar) and is the integral scale length of the turbulence (Banakh et al. 1996, Smalikho and Banakh 2013, Smalikho et al. 2013). This term is not missed in Banakh et al. 1996. It is simply omitted in this paper because it is negligible as compared to other terms under above conditions. The conditions and are realized usually in practice and for estimation of turbulence parameters from the azimuth structure function of the radial velocity measured by lidar can be used the transverse structure function of the radial velocity, as it is used by authors of the papers: Banakh et al. 1996; Frehlich et al. 2006; Smalikho and Banakh 2013; Smalikho et al. 2013. It should be corrected in the manuscript. 3. In the nomenclature (line 67) and on page 16 (lines 445 and 446) there are different definitions of . This parameter is used in Eqs. (39) and (40) under trigonometric function signs (and). On the other hand in line 463 of manuscript the condition , where is the outer scale of turbulence (line 61), is listed. That is must have a dimensionality in meters. The reviewer is sure that there are many others inexactitudes in the manuscript and the authors must attentively look through the manuscript text to minimize the number of those.

References

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