

Interactive comment on “Solar Wind and Kinetic Heliophysics” by Eckart Marsch

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Reply to the referee report

Dear Marco, thanks a lot for your overall positive review, the thoughtful comments and detailed criticism. In response to that the subsequent corrections were made. In detail they are:

I agree with you that only the paper of Parker deserves really the adjective "seminal". This word has now been canceled in the Cranmer citation, and as well "in a seminal paper" for the Horbury citation.

In the wave and turbulence section the related Figure 6 caption has been expanded by adding a clarifying remark on the different frequencies of the measurements involved, which reads:

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"A note of caution is appropriate for this integrated overview plot. The shown velocity fluctuations have been inferred from very different empirical data sets and relate to completely different frequency regimes of measurements made at various radial distances from the Sun."

A new short paragraph was added to the text on page 12 (after the old line 12) to address the concerns of the referee:

"It should be pointed out, however, that their perturbation technique is not at all a consistent turbulence theory, and it was not made clear in their paper if the iterative scheme used converges. In the work by Velli (1993) and Velli et al. (1992) this crucial theme of linear versus nonlinear cascade is discussed extensively, and the linear theory is re-derived carefully. Concerning this issue see also the papers of Verdini et al. (2005, 2010), who attempted to derive a rigorously self-consistent theory, and of Verdini and Velli (2007) on Alfvén waves and turbulence in the solar atmosphere and solar wind."

Two sentences were added on page 28 (lines 1-3):

"The kinetics of parametric instabilities of Alfvén waves and associated evolution of ion distribution functions have been studied by Matteini et al (2010a), and the parametric decay of linearly polarized shear-Alfvén waves in oblique propagation was investigated by means of one and two-dimensional hybrid simulations by Matteini et al. (2010b)."

Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2018-36>, 2018.

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