

Interactive comment on “Distributed observations of wind direction using microstructures attached to actively heated fiber-optic cables” by Karl Lapo et al.

Anonymous Referee #1

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General remarks The paper introduces an interesting concept to measure wind direction with Fiber Optics Distributed Sensing (FODS). The paper is well written. The experiments are well described and the results are carefully worded. This proof of concept is interesting

Major remarks There are no serious flaws in the paper, as far as I can discern. The only thing I would like to see some remark is the effect of buoyancy at (very?) low windspeeds. The heated cable will set up its own convection at low windspeeds. It

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should not be difficult to say something about this. Has this been taken into account by the OpenFOAM simulation? Normally, the effect would be small due to the small diameter of the cable but with the cones, the effective diameter may be large, especially when the cones are narrowly spaced at 2cm.

Minor remarks P1 L20: Petrides et al (doi:10.1029/2010WR009482) is probably the earliest published atmospheric application of FODS. P3 L2: First use of FOC, please write out acronym. Fig1: Where in the tunnel was the sonic anemometer placed? P3 L15: What is U? P4 L17: ‘to’ missing after ‘used’ P4 L21: Does everyone know what ‘turbulent intensity’ means? P4 L26: Perhaps it is stated somewhere but please state here (and in caption Fig2) over how long the windspeed is being averaged. P4 L29: What one really would like to know is how well the cable is captured at this resolution. With field of view and distance from cable, this is easy to calculate. P5 L15: 0.127m is the sampling resolution. The actual resolution is about 0.27m. P7 L6: Capital delta. P14 L8: Dangling modifier: Who/what reviews?

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