Author comment 1 for "Sea Spray Fluxes from the Southwest Coast of the United Kingdom –Dependence on Wind Speed and Wave Height*"* by Yang et al.

Many thanks for the constructive and supportive comments from reviewer #1, Chris Fairall, which we have kept in *Italic*. Please see our replies below.

This paper is a description of an analysis of aerosol measurements made at Penlee Pt (PPAO) on the coast of the UK. Eddy correlation aerosol fluxes are computed and are interpreted as the sum of source and deposition fluxes. An effective aerosol source strength is computed and analyzed with considerations of wind direction, etc.. The authors find the source strength correlations better with wave height and/or wave parameters than with wind speed. The source is stronger than expected for open ocean but weaker than that observed directly from a surf zone. The interpretation is that wave breaking is more intense (or something) in a shallow zone close to shore than the open ocean. Most of the number flux occurs for aerosols greater than .1 and less than 1 micron. The paper is well written and the authors have carefully considered a number of experimental and physical aspects of the analysis and interpretation. In my view it can be published in its present form. I have a few comments the authors may with to consider.

**I suggest the authors make it painfully clear that their results are not affected by surf generation and the enhanced production they see is associated with enhanced breaking in shallow water but external to the shore break. Maybe they thought it was obvious but I pondered this.*

Thanks for the suggestion. We did state this in the paragraph beginning at line 171 already but will make this point clearer. We will add in the abstract and the conclusion a sentence to the effect of "Sea spray fluxes measured from PPAO came essentially all from the shallow waters, and were not noticeably affected by the shore break/surf zone."

**I suggest they carefully check terminology of net, source, and total aerosols. I found myself wondering if they were consistent. A number of figures say 'total aerosol number flux' but I am not confident I know if it is net or source.*

Thanks for the suggestion. We will make it clearer in the revision that 'total' refers to either the CPC flux or the CLASP flux integrated over all size range; 'source' indicates total flux that has been corrected for deposition.

Line 91. I don't think the turbulent flux is the same as the net flux. To me, net=turb-VgC, where Vg is the gravitational fall velocity.
Net=Source-VdC=turb-VgC
For the sizes they are considering, it may be that Vg is much less than Vd. They should state this. If Vg is negligible, then Source=turb+VdC

Sorry for not explaining this more clearly in the original text. Our calculation of the aerosol deposition velocity accounts for size-dependent gravitational settling already. This will be made obvious in Section 2.

On line 94 they state that source is obtained by subtracting deposition from net Source=turb-VdC
Doesn't seem consistent with Fig 5, where source is greater than net. Please check this and get it straight.

This is because we adopt the sign convention of Vd being negative. We will make this clearer in Section 2.

Also suggest they read Andreas et al. JGR, vol 115, C12065, 2010; Freire et al BLM 160:249, 2016; and Nissanka et al. JGR, 9688:9702, 2018.

Thanks for the suggested literature. They are consistent with our assessment that aerosol fluxes and concentrations are not in equilibrium at PPAO.

Figure 11 is certainly interesting. It is surprising that aerosol spectral concentration and source flux is independent of wind speed. The graphs might be a little easier to use of the vertical axis was multiplied by R (are conserving).

The aerosol source flux distribution is not quite independent of wind speed: fluxes of small aerosols are slightly higher at higher wind speeds (as indicated by the error bars), but the bin-separation is not nearly as clear as by wave height. We prefer to keep the vertical axes in dN/dR80 and dF/dR80 as they are the convention in literature.