**My suggestions as implemented in paper\_Sara\_v02**

**Line 255 - 257**: Two monomodal ASDs, one with a mode < 0.055 μm and the other with a mode > 0.055 μm diameter are used to illustrate the concept (Fig. 11a – b). The former has *F* = 0.95 and the latter has *F* = 0.05.

-Remove. Let the reader figure it out form the wordage and removal of the figure will keep our images as data and results based.

**Line 265 – 271:** This explains what Clarke et al (2003) did to prove that D > 1 micron is sea salt. It is serving as justification for this method and why I used it in the thesis. Based on the author guides, which all stressed not publishing work that has already been published, I recommend this be eliminated. We just need to give a reference for our classification of Sea Salt Aerosol, such as:

264 In field studies conducted 265 at a coastal site, Clarke et al. (2003) demonstrated that particles sizing in the middle of the 266 LS04 small fraction - those with a dry diameter larger than 0.5 μm or a RH = 80% wet

267 diameter larger than 1 μm - were composed of sea salt.

-end of paragraph.

Rewriting **362 – 367 to** Remove N and S correlation section

In addition to the analyses noted above, this section also investigates correlations of the fraction of particles smaller than 0.055 μm (*F*; Eq. 6) and *S*. These statistics provide insight into the processes that shape the ASD at Arauco during winter. Throughout this analysis, the focus is on two-hour intervals centered on the arrivals of marine trajectories at the Arauco Site. There are 22 arrivals in the dataset (section 4.2); 17 of these are sea-surface marine trajectories and 5 are marine trajectories originating from aloft.

**Remove 436-454** N and S correlation section. I fought to keep this in my thesis, but for a publication in a journal, I do not feel this is quite as interesting as the N vs V section or small particle section.

**Introduction:**  I’m in favor of shortening this! So many publications I read all tried to find a new way to state the same information about the uncertain effect of anthropogenic aerosols on climate, how they influence the climate, etc. However, I feel like that was the goal when I worked on this section: keep it concise! So, I’m not sure how to shorten it yet. I need to think on it. It would be a good section to shave off some length, though. Thoughts?