

Interactive comment on “Optical characterization of an eddy-induced diatom bloom west of the island of Hawaii” by F. Nencioli et al.

Anonymous Referee #2

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Overview The authors focus is on determining whether Chl/cp is a good indicator of particle composition in an eddy. I do not feel that the content of the manuscript is not novel enough for publication at this time, however the authors appear to have an interesting dataset and I would encourage them to re-think their focus and take some time to fully analyze their data in relation to the rest of the data collected on this cruise. The aim of the research discussed here is not clear, what is the purpose? If the aim is to provide particle composition purely from profiles of Chl and cp then this should be stated, but further reaching implications of the research are missing. For example, if beam c can be used to identify composition of particles you could use LIDAR (air-bourne or space) to determine these parameters remotely, this would be a worthwhile pursuit. For the most part the manuscript reads a little like a cruise report, profiles of optical parameters are shown, but very little effort is made to analyze the results in

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coordination with other data such as cell counts, cell size etc. As result none of the findings appear to be new information to the scientific community. Do the authors have total suspended material measurements or POC? I would like to see the relationship between bp and apg , or Chl a and bbp, TSM and bbp, cpg and TSM discussed. The authors discuss optical properties like Chl/cp and bbp as indicating bulk particle composition, but do not fully characterize all optically active constituents. They state that bbp cab be used to successfully characterize the composition of suspended materials, but do not show any comparisons other than profiles of Chl. The authors appear to have an interesting data set and they would be much better served by fully investigating the optical relationship between particles and the light environment. Specific Pg8080 – You make the assumption that absorption due to dissolved material is negligible. Did you measure ag? ag can be quite high even in case 1 waters and with high chl it could still be important in total attenuation especially at low wavelengths. I would want to see some data to back up the assumption of negligible ag. Results – constant use of terminology “higher than”, “slight lower” to refer to the results provides no information to the reader, the authors should give absolute values for their measured variables. Figure 2 – On a contour plot it is preferable to have the data points shown on the figure so the reader can verify for themselves the validity of the contour. If possible I would like to see not just the location of the cast but also the data taken, whether CTD bottles or continuous Chl fluorescence.

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