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I want to visually demonstrate that chlorophyll levels are higher where there is a higher magnitude slope in sea surface height. I will do this by comparing sea surface height data from the *NRL HYCOM+NCODA* station (Dataset ID: nrlHycomGLBu008e911S) to the Chlorophyll-a measurements from the autonomous aquatic surface vehicle: *Honey Badger* (Dataset ID: LiquidR_HBG3_2015_c3), and/or the *Aqua MODIS (Dataset ID: erdMBchla8day)* satellite. All of these datasets are found in NOAA's ERDDAP data server.

All the data is tabular. The sea surface height data will be translated into rasters. I will create one raster per day for the months of June-August to be used in an animation. Programming will assist these transformation. I also want to create a raster of the slope magnitude for a separate animation. I want to then overlay on each sea surface height raster a feature class of the Chlorophyll-a measurements. I will then be able to analyze whether there is a higher incidence of chlorophyll congregation around high magnitude slopes (the edges of mid-oceanic eddies and pressure systems), at lease if *Honey Badger* has managed to sample within a region of high slope magnitude.

If it looks like *Honey Badger* has not sampled within a targeted region then I would like to compare the sea surface height slope magnitudes to the chlorophyl-a measurements from the *Aqua MODIS* satellite data. This data is available in 1 day or 8 day composites. If I choose the 8 day composite I will have to make the sea surface heights a composite too.

If there is a particular day or zone where the slope magnitude and chlorophyl seem to be strongly connected I would like to create a TIN 3D image or two to visually demonstrate the relationship. If there is a particular segment that contradicts the theory then a 3D image would still be useful.

These animations and maps would help show where chlorophyll blooms are more likely to occur, enabling scientists to more accurately predict a bloom development. This information could also allow scientists to position their equipment in regions more likely to experience a bloom.