**CHARACTERIZING THE DIURNAL CHANGES IN COASTAL BIO-OPTICAL PROPERTIES**

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Coastal processes can change on an hourly time scales, which can impact satellite ocean color bio-optical products. Planning for the future launch of the NASA Geostationary Coastal and Air Pollution Events (GEO-CAPE) mission required characterizing these temporal variations in coastal water optical properties. Ocean color products from overlapping VIIRS orbits (2 looks per day) in conjunction with the same day MODIS orbit create a pseudo-geostationary time series, enabling the quantification of changes in bio-optical processes from ocean color satellite sensors. The Northern Gulf of Mexico diurnal changes in ocean color were characterized by using the overlapping orbits of the VIIRS –NPP ocean color sensor. The changes in ocean color within the 100 minute overlap are dependent on several characteristics with include: a) sensor characterization b) advection of water masses and c) water bio-optical changes. The insitu diurnal changes in ocean color were characterized using above water radiometry from a coastal AERONET (WavCIS CSI-06) site that provides up to 8-10 observations per day (in 15-30 minute increments). These insitu diurnal changes were used to quantify of natural bio-optical fluctuations while validating satellite measurements. The results examine the capability of space-borne sensors to monitor ocean color in dynamic coastal regions that are impacted by tides, re-suspension, and river plume dispersion.