



# Simulating PACE Global Ocean Radiances

## Background:

- The NASA PACE mission is a hyper-spectral radiometer planned for launch in the next decade. It is intended to provide new information on ocean biogeochemical constituents by providing high resolution spectral absorption and scattering. It is the first of its kind for global applications and as such, poses challenges for design and operation.

## Analysis:

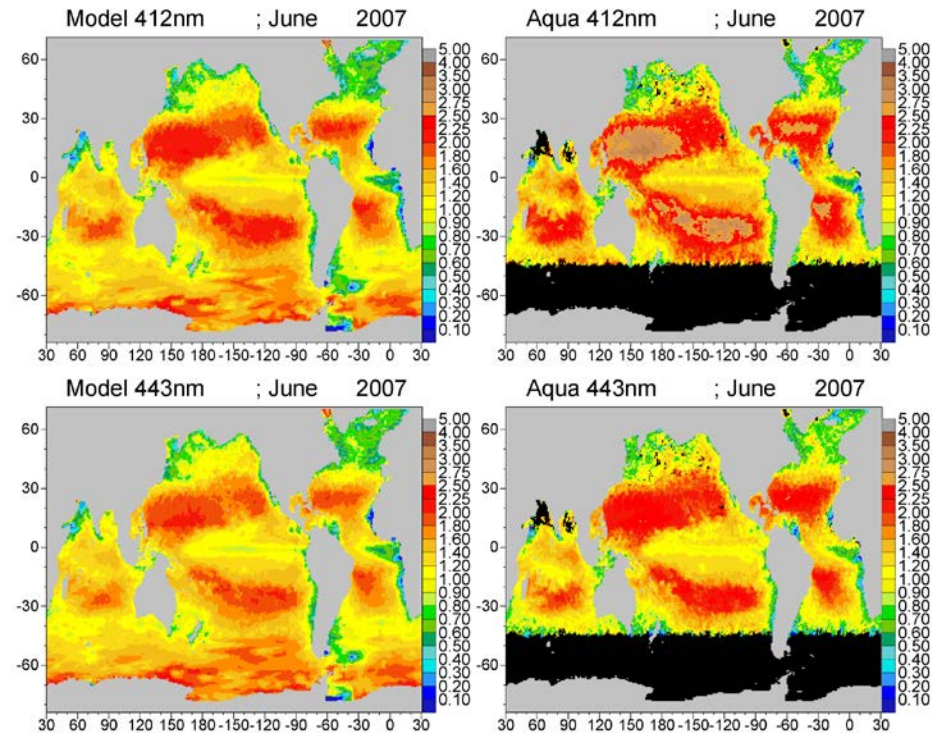
- The NASA Ocean Biogeochemical Model (NOBM) was used to assimilate chlorophyll, PIC and aCDOM data from MODIS. Then normalized water-leaving radiances were derived using the Ocean-Atmosphere Spectral Irradiance Model (OASIM).

## Findings:

- Statistics using MODIS radiance data show significant positive correlations for all MODIS ocean spectral bands

## Significance:

- A 1-nm upwelling radiance data set is produced and provided to the public to support investigations into the hyper-spectral capabilities of PACE ahead of its launch.



Model normalized water-leaving radiances  $[L_wN(\lambda)]$  for 412nm and 443nm compared to MODIS-Aqua radiances. (Units:  $mW\ cm^{-2}\ \mu m^{-1}\ sr^{-1}$ )

Gregg, W.W., and C.S. Rousseaux, 2017. Simulating PACE global ocean radiances. *Frontiers in Marine Science* 4: 1-19. doi:10.3389/fmars.2017.00060