JOINT E-CONFERENCE ON
RENEWABLE ENERGY AND SUSTAINABILITY & GEO SCIENCE AND GREEN TECHNOLOGY
MARCH 15-16, 2023 | WEBINAR

Jumar G. Cadondon

Jumar Cadondon[1,3,*], Perry Neil Fernandez[1], Elaine Fernandez[2], and Rodel Subade[2]

[1]*Division of Physical Sciences and Mathematics,*
[2]*Division of Social Sciences, College of Arts and Sciences, University of the Philippines Visayas, Miagao, Iloilo, Philippines*
[3]*Environment And RemoTe sensing researcH laboratory, Physics Department, College of Science, De La Salle University Manila, Philippines*

Regional Empirical Chl-a Derivation Algorithms for Phytoplankton Monitoring in the Iloilo City Coastline, Philippines

Climate change has been widely observed not only in the world but also in the Philippines. UN sustainable development goals (SDGs) aim to provide understanding on the urgent needs of the environment and society. This paper provides a solution to several SDGs on clean water and sanitation, and climate action. The Iloilo City coastline has been considered as recreational water by the Department of Environment and Natural Resources. It has been regularly monitored for physico-chemical parameters such as dissolved oxygen, temperature, pH, phosphates, oil and grease, and fecal coliform. In this study chlorophyll-a (Chl-a) concentrations were derived from the remote sensing reflectance, measured from the Iloilo city coastline. In-situ fluorometric derived Chl-a dataset were used as the true data. Standard empirical data derived from MODIS OC3M and SeaWIFS OC4V4 algorithms showed low correlation. On the other hand, Near Infrared (NIR) and red three-band model showed higher correlation which is known in estimating Chl-a in turbid waters. This model provides better estimation even with the limitations in satellite- imagery, proximity, turbidity in the different coastal areas in the Philippines.

Biography:

Jumar G. Cadondon, is currently a PhD Physics student in the De La Salle University Manila, Philippines. He is also affiliated with the University of the Philippines Visayas. He focuses on environmental monitoring specifically in fluorescence and LiDAR applications. He had published several papers on water quality monitoring, absorbance and fluorescence measurements, and fluorescence LiDAR systems. He is also part in different projects that aim to solve and answer UN sustainable development goals. He had developed a portable LED fluorescence LiDAR system that estimates the chlorophyll-a concentration of an algae in natural waters.