

## Studies on Bio-geochemistry, Bio-optical Properties and Satellite Validation of Coastal Waters of South Eastern Arabian Sea

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*Supervising Guide*

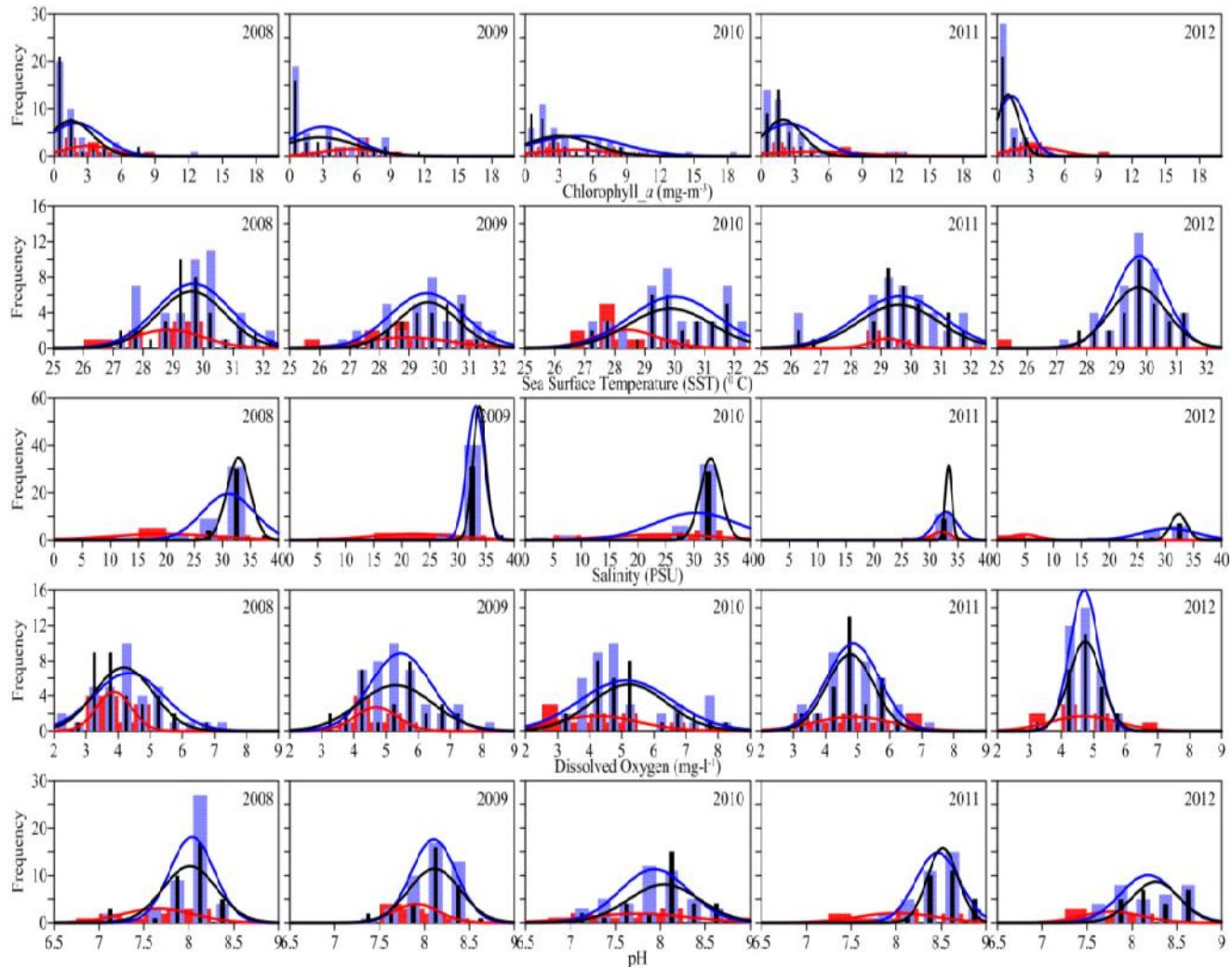
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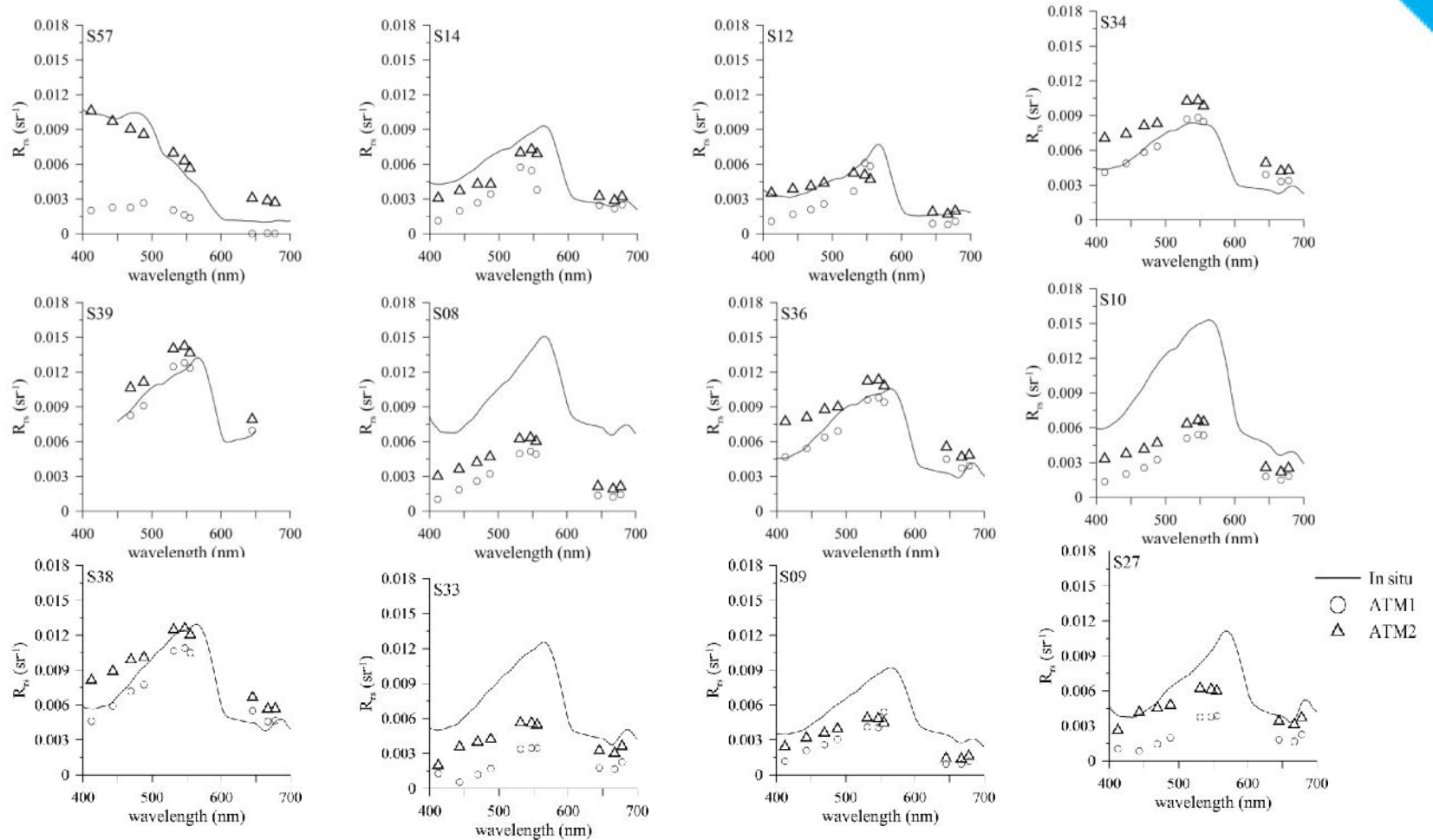


Histogram showing frequency distribution of chlorophyll-*a* (chl-*a*), sea surface temperature (SST), surface salinity, dissolved oxygen (DO), pH. The red bar corresponds to stations in transect T1, blue bar corresponds to stations in transect T2 and black bar corresponds to stations in transect T3. Red, blue and black lines represents the normal Gaussian distribution for the transects T1, T2 and T3 respectively

<b>Pigment group</b>	<b>max (Present study)</b>	<b>max (Publishe d)</b>	<b>Reference</b>
<b>Chlorophylls</b>			
<b>Chlorophyll a</b>	<b>438-440, 675 nm</b>	<b>438, 675 nm</b>	<b>Prezelin and Alberte (1978), Aguirre- Gomez et al (2001)</b>
<b>Chlorophyll b</b>	<b>465 -467 nm</b>	<b>470, 652 nm</b>	<b>Kan and Thornber (1976)</b>
<b>Chlorophyll c</b>	<b>465, 586, 639 nm</b>	<b>460, 640 nm</b>	<b>Mann and Myers (1968), Millie et al. (1997)</b>
<b>Carotenoids</b>			
<b>Fucoxanthin</b>	<b>495, 512, 541 nm</b>	<b>460 – 530 nm</b>	<b>Mann and Myers (1986)</b>
<b>Diadinoxanthin (+carotene)</b>	<b>495 ,512 nm</b>	<b>425 – 500 nm</b>	<b>Mann and Myers (1968)</b>
<b>Phycoerythrin</b>			
<b>Phycoerythrobilin</b>	<b>543,544 nm</b>	<b>543 nm</b>	<b>Ong et al. (1986)</b>
<b>Phycourobilin</b>	<b>491-495</b>	<b>492 nm</b>	<b>Ong et al. (1986), Louchard et al., (2002)</b>

Summary of photosynthetic pigment absorption maxima determined by derivative analysis


## Validation of chl-a



Spectral variability in remote sensing reflectance ( $R_{rs}$ ) measured *in situ*, using hyperspectral radiometer (solid line) and that derived from satellite data using two atmospheric correction schemes, at stations selected for validation. The triangles represents  $R_{rs}$  derived using 2-band model selection and iterative NIR correction. The circles represents  $R_{rs}$  derived using 2-band model selection and MUMM NIR correction



# Current Research

- **Studies on the upwelling and associated features off the South West coast of India and to study the prevailing oceanographic conditions and influence of Arabian Sea warm pool**
  - **Monitoring of the upwelling features of coastal ocean using ocean colour in-situ and satellite data for the oceanographic and defence application.**
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*Thank You*