

**LEMBAR**  
**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW***  
**KARYA ILMIAH : PROSIDING**

Judul Karya Ilmiah/Prosiding : The Dynamic of Convergence Zone Displacement in Western Pacific Ocean on 2015 Super El Niño Event

Jumlah Penulis : 5 (Lima)

Status Pengusul : ~~Penulis pertama~~/ penulis ke 2./~~penulis korespondensi~~ \*\*

Penulis Karya Ilmiah : A A Ashafahani, **Anindya Wirasatriya**, W S Pranowo, D N Sugianto, L Maslukah

Identitas Karya Ilmiah : a. Nama Prosiding : IOP Coference Series: Earth and Environmental Science  
b. No. ISSN/ISBN : 1755-1315  
c. Nomor, Volume, bln, thn : Vol. 750 Tahun 2021  
d. Penerbit : IOP Publishing  
e. DOI Prosiding (jika ada) : 10.1088/1755-1315/750/1/012015  
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g. Terindeks di Scimagojr/Thomson Reuter ISI knowledge atau di..

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(beri ✓ pada kategori yang tepat) ☐ *Prosiding* Forum Ilmiah Nasional

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai .....5)	Nilai Maksimal <i>Prosiding</i> .... 6)		Nilai Yang Diperoleh ..... 7)
	Internasional <input type="text" value="30"/>	Nasional <input type="text"/>	
a. Kelengkapan unsur isi Prosiding (10%)	3		2,5
b. Ruang lingkup dan kedalaman pembahasan (30%)	9		7,8
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	9		7,9
d. Kelengkapan unsur dan kualitas penerbit (30%)	9		7,8
<b>Total = (100%)</b>	<b>30</b>		<b>26,0</b>

Catatan Penilaian Paper oleh Reviewer:

Unsur2 penulisan prosiding cukup baik semua komponen ada dari pendahuluan sampai kesimpulan, tapi ada beberapa penulisan yang tidak konsisten (misal singkatan SST). Tulisan kurang sistimatis, terlalu panjang padahal Pustaka yang dipakai hanya 12, sehingga pembahasan hasil yang disampaikan kurang mengena.

Nilai =  $0,4/4 \times 26 = 2,6$

Semarang,  
Reviewer 1

Prof. Ir. Muslim, M.Sc., Ph.D  
NIP. 196004041987031002  
Unit Kerja : FPIK UNDIP

**LEMBAR**  
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(beri ✓ pada kategori yang tepat) ☐ Prosiding Forum Ilmiah Nasional

Hasil Penilaian *Peer Review* :

Komponen Yang Dinilai .....5)	Nilai Maksimal Prosiding ..... 6)		Nilai Yang Diperoleh ..... 7)
	Internasional <div style="border: 1px solid black; padding: 2px; text-align: center;">30</div>	Nasional <div style="border: 1px solid black; padding: 2px; text-align: center;"></div>	
a. Kelengkapan unsur isi Prosiding (10%)	3		3
b. Ruang lingkup dan kedalaman pembahasan (30%)	9		8
c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	9		8
d. Kelengkapan unsur dan kualitas penerbit (30%)	9		9
<b>Total = (100%)</b>	<b>30</b>		<b>28</b>

Catatan Penilaian Paper oleh Reviewer:

- a) Prosiding *IOP Coference Series: Earth and Environmental Science*, 6th International Conference on Tropical Coastal Region Eco-Development 2020 27-28 October 2020, Indonesia merupakan prosiding seminar internasional. Artikel yang diterbitkan dinilai memiliki unsur unsur artikel ilmiah yang lengkap sesuai dengan kaidah jurnal ilmiah, terdiri dari Abstract, Introduction, Data And Method, Results And Discussion, Conclusion, Acknowledgments, References..
- b) Ruang lingkup artikel ini sangat sesuai dengan bidang penulis yakni oceanografi. Artikel ini menyampaikan penelitian tentang perpindahan zona konvergensi di Samudera Pasifik Barat berdasarkan parameter oceanografi seperti suhu, salinitas dan arus permukaan dari insitu Argo Float, satelit dan data model dan didukung dengan 12 pustaka, dimana yang lebih dari 10 tahun ada 8 pustaka
- c) Artikel ilmiah ini dinilai telah memberikan data dan informasi yang mencukupi. Metode yang digunakan antara lain memanfaatkan Interactive Data Language (IDL) software Processing, data temperature dan salinitas vertical diperoleh dari NetCDF dengan format data menggunakan Ocean Data View software dan real time tracking float. Data temperature yang diperoleh dari beberapa Argo Floats yang sudah dilepas tahun 2015-2017

Prosiding *IOP Coference Series: Earth and Environmental Science* diterbitkan oleh IOP Publishing merupakan penerbit yang sudah lama menerbitkan prosiding seminar yang terindeks Scopus. Penerbit ini dinilai memiliki unsur yang lengkap, dengan kualitas penerbitan dinilai baik. Nilai =  $0,4/4 \times 28 = 2,8$

Semarang, 30 Mei 2022  
Reviewer 2



Prof. Dr. Ir. Ambariyanto, M.Sc  
NIP. 196104131988031002  
Unit : FPIK Undip

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# The Dynamic of Convergence Zone Displacement in Western Pacific Ocean on 2015 Super El Niño Event

[Ashafahani A.A.<sup>a</sup>](#) ; [Wirasatriya A.<sup>a</sup>](#); [Pranowo W.S.<sup>b</sup>](#); [Sugianto D.N.<sup>a</sup>](#); [Maslukah L.<sup>a</sup>](#)
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<sup>a</sup> Department of Oceanography, Faculty of Fisheries and Marine Science, Universitas Diponegoro, Tembalang Campus, St. Prof. Soedarto S.H., Semarang, Central Java, Indonesia

<sup>b</sup> Marine Coastal Data Laboratory, Ministry of Marine Affairs and Fisheries Indonesia, Indonesia

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Warm pool and the existence of equatorial processes in the Pacific Ocean have an important role on El-Nino Southern Oscillation (ENSO). The eastward advection of warm and less saline water from the western Pacific together with the westward advection of cold and more saline water from the central-eastern Pacific induces a convergence of water masses at the eastern edge of the warm pool. The aim of this study is to determine convergence zone displacement in Western Pacific Ocean based on oceanography parameters such as temperature, salinity and surface current from insitu Argo Float, satellite and model data. The convergence zone displacement was characterized by proxies variable of isotherm 28,5 C and isohaline 34,6 psu. The convergence zone is zonally displaced in association with El Nio-La Nia and wind-driven surface current variations. The displacement of the convergence zone moved as far east as 136 W in the eastern Pacific during the 2015 Super El

Niño . Otherwise, convergence zone moved westward near 154 E in the western Pacific , during La Niña periods. During Super El Niño , the stronger-than-normal speed of the North Equatorial Counter Current (NECC) was increased by 0,8 m/s and appears to have been a major factor in convergence zone reaching the far eastern Pacific . A strong significant positive correlation ( $R= 0.88$ , 0.82 and 0.84) between SST and skipjack tuna catch on Super El Niño , La Niña and Normal respectively suggested that changes in skipjack CPUE occurred in phase with movement of convergence zone . © Published under licence by IOP Publishing Ltd.

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☐ 1

Delcroix, T., Picaut, J.

**Zonal displacement of the western equatorial Pacific "fresh pool"**

(1998) *Journal of Geophysical Research: Oceans*, 103 (C1), art. no. 97JC01912, pp. 1087-1098. Cited 129 times.  
[http://onlinelibrary.wiley.com.proxy.undip.ac.id:2048/journal/10.1002/\(ISSN\)2169-9291](http://onlinelibrary.wiley.com.proxy.undip.ac.id:2048/journal/10.1002/(ISSN)2169-9291)

☐ 2

Lehodey, P., Bertignac, M., Hampton, J., Lewis, A., Picaut, J.

**El Nino Southern Oscillation and tuna in the western Pacific**

(1997) *Nature*, 389 (6652), pp. 715-718. Cited 390 times.  
doi: 10.1038/39575

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☐ 3

Maes, C., Behringer, D.

**Using satellite-derived sea level and temperature profiles for determining the salinity variability: A new approach**  
([Open Access](#))

(2000) *Journal of Geophysical Research: Oceans*, 105 (C4), art. no. 1999JC900279, pp. 8537-8547. Cited 65 times.  
[http://agupubs.onlinelibrary.wiley.com.proxy.undip.ac.id:2048/agu/jgr/journal/10.1002/\(ISSN\)2169-9291/](http://agupubs.onlinelibrary.wiley.com.proxy.undip.ac.id:2048/agu/jgr/journal/10.1002/(ISSN)2169-9291/)  
doi: 10.1029/1999jc900279

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☐ 4

Zhi, H, Zhang, RH, Lin, P, Shi, S  
(2019) *Atmosphere*, 475, pp. 1-20.

☐ 5

Picaut, J., Loualalen, M., Menkes, C., Delcroix, T., McPhaden, M.J.

**Mechanism of the zonal displacements of the Pacific warm pool: Implications for ENSO**

(1996) *Science*, 274 (5292), pp. 1486-1489. Cited 326 times.  
doi: 10.1126/science.274.5292.1486

[View at Publisher](#)

- ☐ 6 Picaut, J., Ioualalen, M., Delcroix, T., Masia, F., Murtugudde, R., Vialard, J.  
The oceanic zone of convergence on the eastern edge of the Pacific warm pool: A synthesis of results and implications for El Niño-Southern Oscillation and biogeochemical phenomena ([Open Access](#))  
(2001) *Journal of Geophysical Research: Oceans*, 106 (C2), art. no. 2000JC900141, pp. 2363-2386. Cited 107 times.  
[http://agupubs.onlinelibrary.wiley.com.proxy.undip.ac.id:2048/agu/jgr/journal/10.1002/\(ISSN\)2169-9291/](http://agupubs.onlinelibrary.wiley.com.proxy.undip.ac.id:2048/agu/jgr/journal/10.1002/(ISSN)2169-9291/)  
doi: 10.1029/2000jc900141

[View at Publisher](#)

- ☐ 7 Wirasatriya, A, Kawamura, H, Shimada, T, Hosoda, K  
(2016) *J. Geophys. Res. Atmos*, 121, pp. 1-14.

- ☐ 8 Supangat, A, Adi, TR, Pranowo, WS, Ningsih, NS  
(2004) *The twelfth OMISAR Workshop on Ocean Model*, 11, pp. 1-11. Cited 2 times.

- ☐ 9 John Webb, D.  
On the role of the North Equatorial Counter Current during a strong El Niño ([Open Access](#))  
(2018) *Ocean Science*, 14 (4), pp. 633-660. Cited 11 times.  
[http://www.ocean-sci.net/volumes\\_and\\_issues.html](http://www.ocean-sci.net/volumes_and_issues.html)  
doi: 10.5194/os-14-633-2018

[View at Publisher](#)

- ☐ 10 Wyrski, K  
(1989) *Proceedings Western Pacific International Meeting and Workshop on TOGA COARE (New Caledonia,)* Some Thoughts about the west Pacific Warm Pool, pp. 99-109. Cited 72 times.  
ORSTUM, Centre de Nouma

- ☐ 11 Kunarso, Ningsih NS, Supangat, A  
(2005) *Ilmu Kelautan: Indonesian Journal of Marine Sciences*, 10, pp. 17-23. Cited 5 times.

- ☐ 12 Kunarso, Ismanto, A., Situmorang, R.P., Wulandari, S.Y.  
Variability of upwelling in bone bay and flores sea  
(2018) *International Journal of Civil Engineering and Technology*, 9 (10), pp. 742-751. Cited 5 times.  
[http://www.iaeme.com/MasterAdmin/UploadFolder/IJCIET\\_09\\_10\\_076/IJCIET\\_09\\_10\\_076.pdf](http://www.iaeme.com/MasterAdmin/UploadFolder/IJCIET_09_10_076/IJCIET_09_10_076.pdf)

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## Preface

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## PREFACE

On behalf of the Organizing Committee, I would like to extend our warmest regards to all participants of the 6<sup>th</sup> International Conference on Tropical and Coastal Region Eco-Development (ICTCRED) 2020. This annual conference was held on 27-28 October 2020, organized by the Faculty of Fisheries and Marine Science, Universitas Diponegoro, Semarang, Central Java, Indonesia.

We brought an essential global topic the *Sustainable Development in Coastal Area*. The conference aims to provide a forum to exchange ideas and their current achievements for researchers, academicians, professionals, and industries to expose and exchange innovative ideas, methods, and experiences in the areas related to tropical life sciences and coastal development.

We have accepted 107 abstracts for oral and poster presentations coming from different universities and research centers from Indonesia, Japan, USA, UK, Netherlands, South Korea, Belgium, and Malaysia, which were consisted of 15 big interests. Besides, we have cordially invited ten highly respected researchers as keynote speakers with different fields to share their knowledge and expertise. We are grateful for each one of them for setting aside their valuable time to participate in this conference.

The 6<sup>th</sup> ICTCRED 2020 was firstly planned to be held offline in Semarang, Indonesia. However due to the pandemic COVID-19 situation, we had to adapt the new normal regulation which restrict the face to face meeting to avoid the massive virus transmission. Therefore, the 6<sup>th</sup> ICTCRED 2020 was held in virtual format using Zoom application. This event could not be postponed since it has become the annual event of the Faculty of Fisheries and Marine Science, Universitas Diponegoro. Despite virtual event, we guarantee that the 6<sup>th</sup> ICTCRED 2020 was held professionally, following the rule of scientific conference. Starting with the plenary session with the presentation from the keynote speakers, the participants have their presentation in the panel sessions with 10 minute presentation and 10 minute discussion. The presentation of participant was in video recording format to avoid the technical problems during the presentation. However, the presence of participant was an obligation to answer the questions emerging during discussion session. The recording of the plenary session in the first and second day of the 6<sup>th</sup> ICTCRED 2020 can be seen on <https://www.youtube.com/watch?v=j7uZx6ebRQg&t=3094s> and <https://www.youtube.com/watch?v=UQqZrAsvEJg&t=2990s>, respectively.

The committee extend very kind thank all participants for the success of the conference. They were Rector of Universitas Diponegoro, Dean of Faculty of Fisheries and Marine Science, the keynote speakers. We also would like to acknowledge the Institute of Physics (IOP) for the collaboration in publishing the conference proceedings, our sponsors the Universitas Diponegoro, COREM Undip, ICZM Center Undip, WCU Undip, ISOI, NIOZ, NWO, Tufts University, and TU Delft.

Finally, we proudly present 62 selected papers in IOP Conference Series: Earth and Environmental Science. We do hope that the 6<sup>th</sup> ICTCRED 2020 event brings a fruitful knowledge and be a memorable event not only from the scientific perspective but also in the joy of meeting with other scientists for mutual collaboration.





### **Guest Editor**

Anindya Wirasatriya  
Chair of Scientific Committee

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Eco-Development

## 2020

"Sustainable Development in  
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ONLINE SEMINAR

It is a pleasure to invite you to the 6<sup>th</sup> ICTCRED which will be held in Semarang, 27 - 28 October 2020. The 6<sup>th</sup> ICTCRED is organized by The Faculty of Fisheries and Marine Science, Diponegoro University, Indonesia. The ICTCRED is an annual conference intended to promote and disseminate scientific findings within the scope of Tropical and Coastal Region Eco Development. The 5<sup>th</sup> ICTCRED was held successfully last year in Semarang and the selected articles were published by IOP Proceeding, Biodiversitas, Bioflux, Research Journal of Chemistry and Environment WRA (World Researchers Associations) and Disaster Advance WRA (World Researchers Associations).

## REGISTRATION

We invite the submission of abstracts for oral or poster presentation. All submitted abstracts will be peer reviewed and authors of the accepted abstracts are encouraged to submit a full paper.

Category	Early Bird	Regular
Presenter		
General Participant	Rp 1.500.000	Rp 1.750.000
Undergraduate Student	Rp 1.000.000	Rp 1.250.000
Overseas Participant	\$ 150	\$ 200
Non Presenter	Rp 100.000	Rp 150.000

Second Paper : Rp. 1.500.000

## PUBLICATION

The article presented at ICTCRED 2020 will be published in the proceedings of the *Institute of Physics (IOP)* Journal at AACL (Aquaculture, Aquarium, Conservation & Legislation) Bioflux\*, Biodiversitas\*, Squalen Bulletin of Marine and Fisheries Post Harvest and Biotechnology\*, World Researches Association (Disaster Advances)\*, World Researches Association (Research Journal of Chemistry and Environment)\*, World Researches Association (Research Journal of Biotechnology)\*, International Journal of Environmental Research and Public Health (Special Issue at Climate Change and Health Section)\*, or National accredited (Sinta) Journals: Buletin Oseanografi Marina\*, Jurnal Kelautan Nasional\*, Jurnal Kelautan Tropis\*, and Saintek Perikanan: Indonesian Journal of Fisheries Science and Technology)\*

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## TIMELINE

Non Presenter Registration	: 15 June - 12 October 2020
Abstract Submission	: 15 June - 28 August 2020
Acceptance Notification	: 25 September 2020
Full Text and Poster Submission	: 27 October 2020
Conference	: 27 - 28 October 2020
Early Bird	: 25 Sept - 5 October 2020
Normal Rate	: 5 - 12 October 2020

The conference will cover main theme Sustainable Development in Coastal Area includes the following topics:

- Aquacultures
- Fisheries
- Marine Natural Product
- Biotechnology
- Coastal Engineering
- Marine Science
- Air Sea Interaction
- Geohazard
- Coastal Policy
- Coastal Health
- Coastal Resources
- Coastal Social & Economic
- Fisheries Processing Technology
- Disaster Mitigation & Rehabilitation
- Oceanography

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Accepted papers received: 13 April 2021

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## Foraminiferal Abundance at the Western Water of Kai Islands, Molucca Province, Related to Oceanographic Condition

L Gustiantini, I R Silalahi, G Latuputty, R Zuraida, U Hernawan, C Purwanto and S Marina


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## Screening of Extracellular Enzyme from Phaeophyceae-Associated Fungi

E P Ayuningtyas, M T Sibero, N E Br Hutapea, E H Frederick, R Murwani, D S Zilda, D P Wijayanti, A Sabdono, D Pringgenies and O K Radjasa


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## Investigation of Biodegradable Bacteria as Bio indicators of the Presence of PAHs Contaminants in Marine Waters in the Marine Tourism Area of Makassar City

I Marzuki, M Y Ali, H U Syarif, Erniati, S Gusty, Ritnawati, L Daris and K Nisaa


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## Seaweed-Associated Fungi from Sepanjang Beach, GunungKidul, Yogyakarta as Potential Source of Marine Polysaccharides-Degrading Enzymes

N E B Hutapea, M T Sibero, E P Ayuningtyas, E H Frederick, D P Wijayanti, A Sabdono, D Pringgenies, O K Radjasa, D S Zilda and R Murwani


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Distribution of DO (Dissolved Oxygen) and BOD (Biological Oxygen Demand) in the Waters of Karimunjawa National Park using Two-Dimensional Model Approach

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# Distribution of DO (Dissolved Oxygen) and BOD (Biological Oxygen Demand) in the Waters of Karimunjawa National Park using Two-Dimensional Model Approach

N Rizki<sup>1\*</sup>, L Maslukah<sup>1</sup>, D N Sugianto<sup>1,2</sup>, A Wirasatriya<sup>1,2</sup>, M Zainuri<sup>1</sup>, A Ismanto<sup>1</sup>, A R Purnomo<sup>3</sup> and A D Ningrum<sup>4</sup>

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<sup>2</sup>Center for Coastal Rehabilitation and Disaster Mitigation Studies, Diponegoro University, Semarang, Indonesia

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Email: [nabilahrizki@gmail.com](mailto:nabilahrizki@gmail.com)

**Abstract.** Massive mangrove conversion into intensive pond farming has become environmental problem in Kemujan Island and Karimunjawa Island which affect the water quality. This research aimed to examine the dispersion of DO and BOD related to the current pattern in the seas west of Kemujan Island and Karimunjawa Island by using two-dimensional modelling simulations. Quantitative and descriptive methods were used to provide interpretation and analysis of the modelling simulation results. Modelling simulations were conducted in September 2019. The validation results show that the model and the field measurements has a very good. The results show that the current characteristics are dominated by tidal current, which moves westward with an average magnitude of 0.078 m/s. Furthermore, divergence, convergence and turbulence are also identified. Based on the simulation results, the prediction of DO and BOD concentrations fluctuate in Lagoon Mrican. During spring tide, the DO concentration changes from 7.95 - 8.1 mg/L into 8.55 - >9.45 mg/L and during neap tide, it changes from 8.55 - 8.7 mg/L into 9.15 - >9.45 mg/L. On the other hand, the BOD concentration increases from 0 - 0.08 mg/L to 0.88 - 0.96 mg/L during spring tide and neap tide.

## 1. Introduction

### 1.1. Background

Karimunjawa Islands have a coastal area that is dominated by mangrove ecosystems. In Karimunjawa was found that the phenomenon of mangrove deforestation in the Karimunjawa National Park area was 20.69 ha, which was dominated by the conversion of mangrove land to aquaculture ponds [1,2]. There is urgent need to develop of sustainable management in the utilization of mangrove forests [3], as well as corals [4], seagrass [5] and other ecosystems. In fact, marine and coastal ecosystems are part of the biodiversity and the most vulnerable globally [6]. One of the factors affecting the condition of the coastal ecosystem is the activity of utilizing coastal resources, such as the waters of the Karimunjawa



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# The Effect of ENSO and IOD on The Variability of Sea Surface Temperature and Rainfall in The Natuna Sea

A D Puryajati<sup>1,4,\*</sup>, A Wirasatriya<sup>1</sup>, L Maslukah<sup>1</sup>, D N Sugianto<sup>1</sup>, F Ramdani<sup>2</sup>, A R Jalil<sup>3</sup>, Y O Andrawina<sup>5</sup>

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<sup>2</sup> Department of Information System, Faculty of Computer Science, Universitas Brawijaya, St. Veteran, Malang, East Java, Indonesia

<sup>3</sup> Departement of Marine Science, Faculty of Marine Science and Fisheries, Universitas Hasanuddin, St. Perintis Kemerdekaan, Makassar, South Sulawesi, Indonesia

<sup>4</sup> Algomarine, Universitas Diponegoro, St. Prof. Soedarto S.H., Semarang, Central Java, Indonesia

<sup>5</sup> Erasmus Mundus Joint Master Degree Programme Marine Environment, Département d'astrophys., géophysique et océanographie (AGO) Université de Liège - ULiège, Belgium

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**Abstract.** The Natuna Sea is located at the northwestern part of Indonesia. Previous studies had showed that ENSO has a stronger impact on SST than chlorophyll-a. According to several studies, Indonesian oceans are heavily impacted by IOD. This study uses SST data with high-resolution satellite imagery (MODIS and Pathfinder) and rainfall and wind data from the Reanalysis Model (ERA-5) which is processed using a composite method and correlation grid. This research results, when *La-Niña* negative IOD SST will decrease 1°C and rainfall rises 7 mm/day while when *El-Niño* IOD positive SST will increase by 1°C while in rainfall will decrease by 3 mm/day. The variation of SST and rainfall is more influenced by ENSO than IOD.

## 1. Introduction

Indonesian oceans are located between two large oceans, namely the Pacific Ocean and the Indian Ocean. Natuna Sea, which is located in the northwestern part of the Indonesian oceans is thought to be affected by the two oceans. One aspect of climate variability related to sea surface temperature is the *El-Niño* Southern Oscillation (ENSO), where ENSO is an anomaly of sea surface temperature at the equator of the Pacific Ocean. ENSO has three phenomena including normal ENSO, *El-Niño*, and *La-Niña*. SST anomaly does not only occur in the Pacific Ocean but also occurs in the Indian Ocean. IOD or Indian Ocean Dipole is an SST anomaly that occurs in the Indian Ocean which affects Indonesian oceans as well as being affected by IOD [1].

Previous research conducted by several researchers [2,3,4,5] has studied extensively the climate variability of ENSO and IOD, but the research that assessing the simultaneous impact of ENSO and IOD on SST and rainfall has yet to be carried out, particularly in the Natuna Sea. Continuing from previous research, [5] stated that ENSO greatly affects SST in the Natuna Sea and [3] found that IOD





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N. Taufiq-Spj, J. Hutabarat, A. Trianto, D. N. Sugianto, G. W. Santosa, I. Pratikto, R. Ario, A. Indarjo and S. Suryono

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# ***Astrogorgia* sp. from Saparua, Maluku: Phytochemical Content, Antimicrobial, Antioxidant, and Cytotoxicity Properties**

M T Sibero<sup>1,2\*</sup>, D S Zilda<sup>3</sup>, D Haryanti<sup>1</sup>, Y Igarashi<sup>4</sup>

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Email: [madatriandalasibero@lecturer.undip.ac.id](mailto:madatriandalasibero@lecturer.undip.ac.id)

**Abstract.** Gorgonian is one of marine invertebrates that is still underexplored as a source of bioactive compounds. This study aimed to discover the biological properties of *Astrogorgia* sp. and its phytochemical content. A consecutive extraction method using *n*-hexane, ethyl acetate and methanol was conducted to obtain secondary metabolites from the sample. Antimicrobial assay was performed against ESBL *E. coli*, MRSA, *C. albicans*, and *M. furfur*; cytotoxicity against P388 Murine Leukaemia Cancer Cells, antioxidant was tested using DPPH method. The consecutive extraction method gave yield (%) as follows:  $0.21 \pm 0.22$  from *n*-hexane;  $0.67 \pm 0.17$  from acetyl acetate; and  $1.20 \pm 0.50$  from methanol. All fractions gave positive results on antibacterial assay against all pathogens while only gave antifungal activity against *C. albicans*. Methanol fraction had the highest antioxidant activity, while *n*-hexane fraction showed the best cytotoxicity.

## **1. Introduction**

Sessile marine invertebrates produce unique chemical substances to protect themselves from predator and environmental stresses [1]–[3]. These chemical substances steal attention due to their beneficial biological activity for humans. It is proven by the FDA's approval of several drugs that are originated from marine invertebrate such as ascidian, bryozoan, and sponge [4]. Among all reports, sponge has been emphasized as the most profiling marine invertebrate since many studies successfully isolated bioactive compounds from it [5]. Nonetheless, other invertebrates such as gorgonian become neglected.

Gorgonian is a member of Alcyonacea (soft corals), which is characterized by always have eight tentacles (octocoral) in their polyps with rows of pinnules along both sides of the tentacles [6]. This animal is commonly found in almost all marine environments from shallow-water, mesophotic to the deep sea; therefore, plenty of studies were conducted to discover their biodiversity in Indonesia [6], [7]. However, the study of biological activity of Indonesia's gorgonian is rarely reported. The latest study







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