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## Data Article

## Data on micrometeorological parameters and Energy Fluxes at an intertidal zone of a Tropical Coastal Ocean

## Yusri Yusup<sup>a,b</sup>, John Stephen Kayode<sup>a,\*</sup>, Abbas F.M. Alkarkhi<sup>c</sup>

<sup>a</sup> Environmental Technology, School of Industrial Technology, Universiti Sains Malaysia, USM 11800, Pulau Pinang, Malaysia

<sup>b</sup> Centre for Marine & Coastal Studies (CEMACS), Universiti Sains Malaysia, Pulau Pinang, Malaysia

<sup>c</sup> Malaysian Institute of Chemical & Bioengineering Technology, Universiti Kuala Lumpur, 78000 Melaka,

Malaysia

### ARTICLE INFO

#### Article history: Data on the micrometeorological parameters and Energy Fluxes at Received 17 May 2018 an intertidal zone of a Tropical Coastal Ocean was carried out on an Received in revised form installed eddy covariance instruments at a Muka head station in 25 September 2018 the north-western end of the Pinang Island (5°28'06"N, Accepted 28 September 2018 100°12'01"E). Peninsula Malaysia. The vast source of the supply of energy and heat to the hydrologic and earth's energy cycles principally come from the oceans. The exchange of energies via air-sea interactions is crucial to the understanding of climate variability, energy, and water budget. The turbulent energy fluxes are primary mechanisms through which the ocean releases the heat absorbed from the solar radiations to the environment. The eddy covariance (EC) system is the direct technique of measuring the micrometeorological parameters which allow the measurement of these turbulent fluxes in the time scale of half-hourly basis at 20 Hz over a long period. The data being presented is the comparison of the two-year seasonality patterns of monsoons variability on the measured microclimate variables in the southern South China Sea coastal area. © 2018 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

ABSTRACT

\* Corresponding author. E-mail address: jskayode@usm.my (J.S. Kayode).

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#### 55 Specifications table 56

57		
58	Subject area	Environmental Atmospheric Physics and Meteorology
59 60	More specific subject area	Environment and Climate Change
00 C1	Type of data	Text file and figures
61	How data was	Magsurements of the microclimate variables at 20 Hz Half hourly was achieved
62	acquired	using the EC system. The data was collected for two years i.e. from November
63	acquireu	2015 to October 2017 which encompassed two annual cycles of the Monsoon
64		
65	Data format	Seusons. Filtered and analyzed
66	Data IOIIIIat	Filleled and analyzed
67	Experimental	The data were collected at a frequency of 20 Hz Half-hourly time series
68	factors	measurements.
69	Experimental	The "Biomet" system of slow-response sensors that measured the microclimate
70	features	variables was used to complement the eddy covariance (EC) system.
71	Data source	Muka head station in the north-western end of the Pinang Island (5°28'06"N,
72	location	100°12'01''E), Peninsula Malaysia.
73	Data accessibility	The data is with this article as a supplementary excel file
74	Related research	1. Yusup Y, Alkarkhi AFM, Kayode JS, Alqaraghuli WAA. Statistical modeling the
75	article	effects of microclimate variables on carbon dioxide flux at the tropical coastal
76		ocean in the southern South China Sea. Dynamics of Atmospheres and
77		Oceans. 2018. 84. 10–21. (https://doi.org/10.1016/j.dynatmoce.2018.08.002).
78		2. Yusup Y, Kayode JS, Alkarkhi AFM. A methodological approach to the air-sea
79		energy fluxes data collection and analysis at the tropical coastal ocean,
80		MethodsX. 2018. 5. 448-453. (https://doi.org/10.1016/j.mex.2018.05.003).
81		
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## Value of the data

- The data being presented here showed micrometeorological parameters and Energy budget at an intertidal zone of a tropical coastal ocean.
- The significance of data of this scale is in its usefulness for other researchers working on the frequency and intensity of the devastating effects of floods ravaging the region occasioned by the monsoon seasons.
- The research data is related to the connection amongst energy budget, global warming and climate 91 change trends triggered by the monsoonal seasonal variability. The data acquisition processes and 92 instrumentations is reproduceable in any region of the world. 93

## 1. Data

98 The data for the monsoonal variability in the tropical coast of Peninsula Malaysia on the micrometeorological parameters and Energy budget was observed based on the 2 years (i.e., from 99 November 2015 to October 2017). The data recorded cut across two annual cycles of the Southeast 100 Asia monsoon seasons. The data was collected to appreciate the climate variability on the overall 101 variations of the meteorological parameters measured occasion by precipitation and temperature 102 103 anomalies (Fig. 1a) brought by means of the seasonal monsoons occasioned by the continuous high vapor pressure, (Fig. 1b) [1]. A total of 33,452 data points for the period was recorded. 104

105 The patterns of the micrometeorological data and other parameters were examined to understand the monsoon seasons on their distributions and variability (Fig. 2). Temperature variations (Fig. 1a), 106 107 occasional by the number of solar radiations reaching the earth's surface controlled the distributions 108 of precipitation in the southeast Asia regions [2-4]. Furthermore, the data demonstrates varied

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