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International Conference on Mathematics,
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proudly presents this certificate to

Sjarif Ismail

as a

Presenter

in the conference that was held in Novotel Hotel, Balikpapan East Borneo, Indonesia

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Theme:

“Tropical research and technology-Leading the way
towards the society and environment of the future”

Faculty of Mathematics and Natural Science
Mulawarman University



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Chairman





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271-POG-P

Spatial Temporal Variation of Anomaly Chlorophyll-a in Southern Java and Nusa Tenggara using Empirical Orthogonal Function

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Data from Global Ocean Biogeochemistry models was used to study the spatial and temporal variation of sea surface chlorophyll-a in southern Java and Nusa Tenggara. Empirical Orthogonal Function (EOF) analysis was applied to decompose spatial and temporal mode of the anomaly chlorophyll-a. The first mode (58.7%) revealed strong interannual variation that had significant correlation with Indian Ocean Dipole (IOD) event. The Second mode (7.2%) of temporal pattern showed seasonal periods while the spatial pattern showed the opposite phase between southern Java and Nusa Tenggara. The spatial pattern of mode 3 (5.2%) and 4 (2.7%) showed interesting pattern where it showed strong variance in exit way of Indonesian Trough Flow. However, it need more study to conclude the phenomena that was revealed by mode 3 and 4.

Keywords: EOF; Indian Ocean Dipole; sea surface chlorophyll-a; Southern Java-Nusa Tenggara.

272-BOC-P

The pH Increasing Effect of Wuluh Starfruit (*Averrhoa bilimbi* L.) Juice on Vasodilation Activity

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Wuluh starfruit (*Averrhoa bilimbi* L.) is Oxalidaceae family which can be used as an antihypertensive drug by ethnomedicine. *A. bilimbi* fruit juice is proven to lower blood pressure in preclinical testing and limited phase 1 clinical trials, where the mechanism of action is through vasodilation of blood vessels. The taste of juice is very acid, but there is no information about the effect of pH increasing of juice on vasodilation activity of blood vessels. In this research, *A. bilimbi* fruits were made into juice, filtered, and centrifuged to get the supernatant. The pH of juice was increased by NaOH and KOH addition. Vasodilation activity of juice was tested on isolated organs of the aortic ring with endothelium. The control that used was Krebs-Henseleit solution with a pH approaching the tested juice solution. The result showed that an increase in the pH of *A. bilimbi* fruit juice caused a decrease in vasodilation activity. The type of solution to increase the pH of the juice also affected the changes in vasodilation activity. It can be concluded that the pH increasing on juice of *A. bilimbi* fruit can decrease vasodilation activity in isolated organs of aortic ring with endothelium.

Keywords: Averrhoa bilimbi; fruit; in vitro; pH; vasodilation.