

A STUDY ON THE CORRELATION OF SEA SURFACE TEMPERATURE  
(SST) IN SOUTH CHINA SEA AND PRECIPITATION AT EAST COAST OF  
PENINSULAR MALAYSIA USING SATELLITE IMAGERY

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FACULTY OF MARITIME STUDIES AND MARINE SCIENCE  
UNIVERSITI MALAYSIA TERENGGANU

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**By**

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**Research Report submitted in partial fulfillment of  
the requirements for the degree of  
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**Department of Marine Science  
Faculty of Maritime Studies and Marine Science  
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DEPARTMENT OF MARINE SCIENCE  
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE

**DECLARATION AND VERIFICATION REPORT**  
**FINAL YEAR RESEARCH PROJECT**

It is hereby declared and verified that this research report entitled:  
Study on the correlation of sea surface temperature (SST) in South China Sea and precipitation at east coast of Peninsular Malaysia using satellite imagery by Nurul Ashikin Ismail, Matric No. UK 17016 have been examined and all errors identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfillment towards obtaining the Degree of marine biology, Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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## LIST OF ABBREVIATIONS

SST	-	sea surface temperature
SCS	-	South China Sea
NEM	-	North East Monsoon
SWM	-	South West Monsoon
ENSO	-	El-Nino Southern Oscillation
ITCZ	-	Intertropical Convergence Zone
MODIS	-	Moderate Resolution Imaging Spectroradiometer

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## **ABSTRACT**

The study was conducted on the chosen areas which were the South China Sea area and the east coast of Peninsular Malaysia. Precipitation data from 2005 until 2010 were obtained from the Department of Irrigation and Drainage and analyzed in order to determine the precipitation pattern at the east coast of Peninsular Malaysia. The data received were from the 30 rainfall stations that were chosen randomly, both inland and coastal. As for the SCS SST data, images of MODIS satellite were downloaded from 2005 until 2010. The images were then processed in order to extract the SST value. From the analysis conducted, the precipitation pattern was similar throughout the six years chosen. SCS SST ranges from 16°C up to 35°C and the range varies according to month. From the study, it was determined that precipitation has a weak correlation with the SST of SCS.

# **KAJIAN TERHADAP HUBUNGAN ANTARA SUHU PERMUKAAN LAUT DI LAUT CINA SELATAN DENGAN KADAR HUJAN DI PANTAI TIMUR MALAYSIA MENGGUNAKAN IMEJ SATELIT**

## **ABSTRAK**

Kajian telah dijalankan terhadap kawasan yang dipilih iaitu Laut Cina Selatan dan Pantai Timur Malaysia. Data hujan diperolehi daripada Jabatan Pengairan dan Saliran daripada tahun 2005 sehingga 2010 telah dianalisa bagi mendapatkan taburan hujan di kawasan pantai timur Malaysia. Data yang diperolehi adalah daripada 30 buah stesen hujan yang terletak di perairan pantai dan darat dipilih secara rawak. Bagi data suhu permukaan laut, imej-imej daripada satelit MODIS telah dimuat turun dari tahun 2005 sehingga 2010. Imej-imej tersebut telah diproses bagi mendapatkan hasil terakhir iaitu nilai suhu permukaan laut di Laut Cina Selatan. Daripada analisa yang telah dijalankan, didapati bahawa nilai suhu permukaan laut berada di dalam lingkungan  $16^{\circ}\text{C}$  sehingga  $35^{\circ}\text{C}$  mengikut bulan-bulan tertentu. Bagi taburan hujan pula, didapati bahawa corak taburan hujan adalah hamper sama bagi keenam- enam tahun yang dipilih. Dapat disimpulkan bahawa terdapat hubungan yang lemah antara taburan hujan dan suhu permukaan laut di Laut Cina Selatan.