

UTILIZATION OF REMOTE SENSING AND GIS FOR
TWO-DIMENSIONAL VEGETATION CLASSIFICATION

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**UTILIZATION OF REMOTE SENSING AND GIS FOR NORTHEAST MONSOON
CLOUD MAPPING**

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By

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 PROJEK PENYELIDIKAN I DAN II**

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Utilization of Remote Sensing and GIS For Cloud Mapping
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telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Samudera sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda (Sains Samudera), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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LIST OF ABBREVIATIONS

AVHRR	-	Advanced Very High Resolution Radiometer
HRPT	-	high resolution picture transmission
NOAA	-	National Oceanic and Atmospheric Administration
SEAFDEC	-	South East Asia Fishery Development Center
VHRR	-	Very High Resolution Radiometer
a.m.	-	<i>ante meridiem</i>
p.m.	-	<i>post meridiem</i>
MOSS	-	Map Overlay and Statistical System
SO	-	Rectified Skew Orthomorphic

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ABSTRACT

Malaysia in the Malay Archipelago comprises the Malay Peninsula, Sabah, and Sarawak. It is located between 1° and 7° N latitude and 100° and 120° E longitude. This region will face two types of monsoon throughout the year. It is Northeast monsoon and Southwest monsoon. The monsoon rains over Kelantan and Terengganu usually begin after the first week of November. Pahang and east Johor usually receive heavy rainfall in December and early January. During the months of November and December, the widespread continuous rain that occurs over the east coast states might spill over to the west coast states which will bring continuous widespread rain lasting for a few hours. From mid January the weather begins to be relatively drier over Peninsula Malaysia. As the cloud will play an important part in determining the weather. This study is launch for investigating the wind velocity during Northeast monsoon in this region. The data used in this study are taken from SEAFDEC and were taken by the NOAA (National Oceanic and Atmospheric Administration) satellite AVHRR images. Also by using this method the weather could be determined. The cloud will be geo-coded first before applying the other techniques. From the image the distance can be determined by using the overlaying technique on two images that were taken in a day time. The cloud velocity can be measured after the distance is taken. The types of cloud that appear during the monsoon also can be monitored.

ABSTRAK

Malaysia adalah negara yang terletak di kepulauan melayu merangkumi semenanjung Malaysia, Sabah dan Sarawak. Ia terletak di 1° dan 7° N latitud dan 100° dan 120° E longitud. Kawasan ini akan menghadapi 2 jenis musim monsun sepanjang tahun. Iaitu musim monsun Timur Laut dan Barat Daya. Monsun yang terjadi akan menurunkan hujan di daerah Kelantan dan Terengganu bermula pada minggu pertama bulan November. Pahang dan Johor timur akan menerima hujan lebat pada bulan Disember dan awal Januari. Pada bulan November dan Disember hujan yang turun pada pantai timur akan merebak ke pantai barat dan hujan akan berlaku beberapa jam. Pada bulan pertengahan Januari cuaca akan menjadi lebih kering. Awan memainkan peranan penting dalam menentukan cuaca. Kajian ini di jalankan bagi menentukan halaju angin pada musim monsun Timur Laut yang berlaku di kawasan ini. Data yang telah digunakan diambil dari jabatan perikanan SEAFDEC dan telah dirakam dengan menggunakan satelit kaji cuaca NOAA (National Oceanic and Atmospheric Administration). Dengan menggunakan cara ini juga cuaca dapat diramalkan. Data awan yang diperolehi akan digeo kod sebelum teknik lain digunakan. Daripada imej tersebut teknik lapisan digunakan bagi menentukan jarak antara awan tersebut yang telah diambil selang jarak masa selama sehari. Halaju angin boleh dikira setelah jarak antara awan tersebut diperolehi. Jenis awan yang hadir pada musim monsun tersebut juga boleh diperhatikan.