

ANALISIS ALGORITMA DETEKSAN AWAN PADA GAMBAR

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INTER-MONSOON CLOUD DETECTION BY NOAA IMAGES

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**JABATAN SAINS SAMUDERA
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**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

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LIST OF ABBREVIATIONS/SYMBOLS

1. NOAA - National Oceanic and Atmospheric Administration
2. AVHRR - Advanced Very High Resolution Radiometer
3. UCAR - University Corporation for Atmospheric Research
4. SEAFDEC - South East Asia Fishery Development Center
5. TIROS - Television and Infrared Observation Satellite
6. ESSA - Environmental Science Services Administration
7. VHRR - Very High Resolution Radiometer
8. HRPT - High Resolution Picture Transmission
9. POES - Polar Orbiting Environmental Satellite
10. km - kilometer
11. m - meter
12. °C - degree Celsius
13. °F - degree Fahrenheit

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ABSTRAK

Negara Malaysia iaitu melingkungi Semenanjung dan kepulauan Borneo (Sabah dan Sarawak) terjajar di antara garisan khatulistiwa dan latitude 7° Utara. Malaysia yang terletak di kawasan doldrum khatulistiwa amat jarang sekali mempunyai keadaan langit tidak berawan langsung meski pun pada musim kemarau teruk. Awan memainkan peranan penting dalam iklim Malaysia. Ciri-ciri iklim Malaysia ialah mempunyai suhu yang seragam, kelembapan yang tinggi dan hujan yang banyak. Malaysia mengalami perubahan empat musim pada sepanjang tahun iaitu monsun barat daya, monsun timur laut dan dua musim peralihan monsun yang lebih pendek. Monsun barat daya biasanya bermula pada setengah terakhir bulan Mei atau awal bulan Jun dan tamat pada akhir September. Monsun timur laut biasanya bermula pada awal November dan berakhir pada Mac. Manakala dua lagi monsoon peralihan berlaku pada bulan April dan Oktober. Tujuan projek ini adalah untuk mengkaji keadaan morfologi dan pergerakan awan semasa musim monsoon peralihan yang berlaku di Malaysia. Keadaan morfologi dan pergerakan awan dikaji dengan menggunakan gambar satellite AVHRR (Advanced Very High Resolution Radiometer) oleh NOAA (National Oceanic and Atmospheric Administration). Cara ini boleh digunakan sebagai satu cara dalam aspek amaran cuaca.

ABSTRACT

Most of Malaysia including Peninsular and Borneo (Sabah and Sarawak) region lies between the equator and the northern 7° latitude. Situated at the equatorial doldrums area, it is extremely rare to have a full day with completely clear sky even in periods of severe drought. Cloud plays an important role in Malaysian climate. The characteristic features of the climate of Malaysia are uniform temperature, high humidity and copious rainfall and they arise mainly from the maritime exposure of the country. Malaysia having four season throughout the year, namely, the southwest monsoon, northeast monsoon and two shorter inter-monsoon seasons. The southwest monsoon is usually established in the later half of May or early June and ends in September. The northeast monsoon usually commences in early November and ends in March. While the other two transitional monsoon occur during the month of April and October. This project aims to investigate cloud morphology and its movement during the inter-monsoon period in Malaysia. The cloud morphology and movements were determined by using the NOAA (National Oceanic and Atmospheric Administration) satellite AVHRR (Advanced Very High Resolution Radiometer) images. This method could be used for weather forecasting.