

ESTIMATING THE LONGSHORE TRANSPORT ENERGY AND
TRANSPORT RATE AT UMT BEACH USING LEO DATA

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By

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:
**ESTIMATING THE LONGSHORE TRANSPORT ENERGY AND TRANSPORT
RATE AT UMT BEACH USING LEO DATA**

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telah diperiksa dan semua pembetulan yang disarankan telah dilakukan.

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LIST OF ABBREVIATIONS

CERC - Coastal Engineering Research Centre

UMT - Universiti Malaysia Terengganu

LEO - Littoral Environment Observation

ABSTRACT

This study was done in order to quantify the longshore transport energy and transport rate thus the variability in energy and sediment transport at UMT beach for November and December 2007. Data of beach parameters were observed daily and recorded under the Littoral Environmental Observation (LEO) data collection program for at least 16 days per month while the empirical equations listed in Shore Protection Manual were used to analyze the data. Dominant wind direction for the two observed months were from the North East direction with speed ranging from 0m/s and 13m/s. Dominant wave approaching the beach were from the angle of 100° from the shoreline while the longshore current velocity at UMT beach ranged between 0.07m/s and 0.41m/s. Range of longshore transport energy is between 0.01kg/s and 1.48kg/s, transporting sediment to the North of UMT beach at an average rate of $2436\text{m}^3/\text{day}$.

Menganggar tenaga arus pesisiran pantai dan kadar pengangkutan sedimen di pantai UMT menggunakan data LEO

ABSTRAK

Kajian ini dijalankan bagi menganggar tenaga dan kadar pengangkutan sedimen selari dengan garis pantai oleh arus pesisiran pantai. Kajian ini juga dijalankan bagi mengenalpasti kepelbagaian tenaga dan pengangkutan sedimen yang wujud di Pantai Universiti Malaysia Terengganu bagi bulan November dan Disember 2007. Pengumpulan data parameter pantai dilakukan mengikut kaedah Littoral Environmental Observation (LEO). Analisis data dilakukan menggunakan formula yang disenaraikan dalam Shore Protection Manual (SPM). Bagi data yang telah diperolehi, didapati angin dominan bertiup dari arah Timur Laut dengan julat kelajuan di antara 0m/s sehingga 13m/s. Ombak kebiasannya datang dari sudut 100° dari garis pantai. Kelajuan arus pesisir pantai adalah di antara 0.07m/s sehingga 0.41m/s. Julat tenaga arus pesisir pantai adalah di antara 0.01kg/s sehingga 1.48kg/s. Kekuatan tenaga arus pesisir ini telah mengangkut sedimen ke sebelah utara dengan kadar purata sebanyak $2436\text{m}^3/\text{day}$.