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**REMOTE SENSING APPLICATION FOR SPATIAL TEMPORAL  
 ANALYSIS OF RAINFALL  
 AND SEA SURFACE TEMPERATURE ANOMALY  
 IN INDONESIA**  
 Cases Study in 2010  
 Ling. Trop., 6, 1 (2012): 1-10.

Abstract: Remote sensing application is one of the best data to observing spatial and temporal situation on earth surface. Application of Tropical Rainfall Measuring Mission (TRMM) and MODIS (Moderate Resolution Imaging Spectro-radiometer) are use for spatial and temporal analysis of rainfall and sea surface temperature (SST) anomaly in Indonesia on 2010. Spatial and temporal rainfall and SST anomaly data is important, especially on ENSO events, because has wide effect of social and economy in Indonesia. Monthly rainfall data measured by the TRMM 3B43 over the course of 13 years and Monthly SST collected by the MODIS was employed to analyze anomaly of rainfall and SST in Indonesia on 2010. Analysis result of TRMM in 2010 show that increasing of rainfall anomaly begin from April in Nusa Tenggara archipelago and eastern of Java and finish in November in those region. Meanwhile, analysis result of MODIS satellite data for SST anomaly is shown at the beginning of 2010, SST anomaly begin occurred in western of Indonesia and the biggest was happen in southern of Indonesia at August to September and finish at November. Spatial and temporal analysis data show that increasing of SST anomaly could affect increasing of rainfall anomaly in those same regions excepted in January to March.  
 Keywords: MODIS, rainfall, temperature, and TRMM.

DDC 551.577  
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**THE INFLUENCE OF TROPICAL CYCLONE  
 OCCURRENCE ERROL AND 90S TO VARIATIONS  
 OF RAINFALL INTENSITY  
 ON THE SOUTHERN COAST OF JAVA**  
 Ling. Trop., 6, 1 (2012): 11-20.

Abstract: Referring to the incidence of typhoon Fengshen in the Philippines June 20, 2008 resulting in the deaths of more than 1000 people and tens of thousands of people stranded on the roofs of their homes by the floods that accompanied the typhoon, the same research as the title of this paper needs to be done. The purpose of this research is to investigate and identify the incidence of tropical cyclones in the area around southern ocean of Java and analyze its contribution to rainfall variability from TRMM (Tropical Rainfall Measuring Mission) satellite observations. Data generated by a combination of three main TRMM satellite sensors, namely PR (Precipitation Radar), TMI (TRMM Microwave Imager) and VIRS (Visible Infrared Scanner) sensors, including the 3B42V6 TRMM data, was used to determine the characteristics of rainfall in the system of tropical cyclones when the incident as well as the horizontal distribution and changes in rainfall intensity in the region surrounding ocean to the south coast of Java at 1 to 12 hours afterwards. The results showed that 90S tropical cyclones that occurred on March 30, 2011 at 16.40Z and centered at 14.0 ° S, 113.5 ° E which has the characteristics of rainfall profiles from the surface and reaches its peak at an altitude of 17.5 km with maximum reflectivity of 50 dBZ, proved to have a significant effect on rainfall intensity variation on the south coast of Java, from 0.08 to 2.59 mm / hour. Meanwhile, the tropical cyclone occurrence of Errol only a little bit influence on rainfall intensity variation on the southern coast of Java.  
 Keywords: Errol and 90S tropical cyclone, intensity variation, rainfall, and Java.

DDC 628.42  
 Chrismalia Hapsari (Jurusan Teknik Lingkungan, Institut Teknologi Sepuluh November)  
 Susi Agustina Wilujeng (Jurusan Teknik Lingkungan, Institut Teknologi Sepuluh November)  
**STUDY OF CARBON DIOXIDE (CO<sub>2</sub>) AND METHANE (CH<sub>4</sub>) EMISSION FROM SOLID WASTE REDUCTION  
 IN SOUTHERN SURABAYA**  
 Ling. Trop., 6, 1 (2012): 21-30.

Abstract: Solid waste is one of the result sector from human activities that contributed to global warming. Solid waste accumulated within a time period will decompose and produce gases that spread in the air, most gas produced from organic waste degradation process is methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>). Methodology from this study distributed questionnaires to 100 respondents. Measured and retrieved solid waste compositions then performed using Minitab and SPSS to determine the factors that influence people's behavior in waste reduction activities. And to find out the emissions produced from the waste in South Surabaya and the emission of waste reduction activities are processed using the IPCC and U.S-EPA. Emissions of carbon dioxide(CO<sub>2</sub>) and methane (CH<sub>4</sub>) from the solid waste in the southern part of Surabaya without waste reduction effort 207,888.26MTCO<sub>2</sub>E/year and 1, 447,349.41MTCO<sub>2</sub>ECH<sub>4</sub>/year. From the waste reduction efforts, can reduce emissions of carbon dioxide 19.892,99MTCO<sub>2</sub>E/year (9,56%). Whereas, emissions of methane from composting was 8,12 MTCO<sub>2</sub>E CH<sub>4</sub>/year (0,00056%) released into the air.  
 Keywords: carbon dioxide, emission, methane, reductions, and waste.

<p>DDC 628.440 4  Ellina S. Pandebesie (Jurusan Teknik Lingkungan  Institut Teknologi Sepuluh Noverber)  Dety Rayuanti (Jurusan Teknik Lingkungan  Institut Teknologi Sepuluh Noverber)  <b>INFLUENCE OF RICE HUSK  ON DOMESTIC SOLID WASTE COMPOSTING</b>  Ling. Trop., 6, 1 (2012): 31-40.</p> <p>Abstract: To reduce the amount of solidwaste that must be transported to final disposal, so transportation cost to Final Disposal can be reduced and operate of Final Disposal could be extended, then the way you can do is to convert the solidwaste into compost. In addition, the compost produced has economic value, because it can be sold as a soil conditioner material. Solidwaste that is used in this study originated from the market. It is because most domestic waste consists of organic materials that can be used as raw material for composting processes. The objectives of this research are to determine the influence of rice husk on composting processes in terms of process time and C organic degradation rate. The research was conducted by using 15 kg of garbage that have been cut into small pieces. There are three research variables conducted, without the addition of rice husk as a control (R<sub>1</sub>), 4 kg of rice husk added (R<sub>2</sub>) and 8 kg of rice husk added (R<sub>3</sub>). Research carried out by aerobic facultative composting for 30 days using a reactor that can be rotated. The results showed rice husk added was influenced composting processes. Observations at the end of research obtained C/ N ratio value 21.23 for R<sub>1</sub>, 17.52 for R<sub>2</sub> and 23.7.for R<sub>3</sub>. C organic reduction was 9.1% for R<sub>1</sub>; 10.4% for R<sub>2</sub> and 13.6% for R<sub>3</sub>.  Keywords: aerobic, C/N ratio, composting, facultative, rice husk, solidwaste.</p>	<p>DDC 551.554  Iis Sofiati (Pusat Sains dan Teknologi Atmosfer-LAPAN)  Tiin Sinatra (Pusat Sains dan Teknologi Atmosfer-LAPAN)  <b>POLLUTANT ANALYSIS ON FOREST FIRE EVENT  AND THEIR RELATIONSHIP  WITH El Niño PHENOMENON</b>  <b>AT PALANGKARAYA-CENTER OF KALIMANTAN</b>  Ling. Trop., 6, 1 (2012): 41-50.</p> <p>Abstract: The forest fires and land in Palangkaraya-Central Kalimantan, occur almost every year during the dry season. According to the report of forest fires and land restraint shown that from 2000 to 2008 had been a forest fire and have an impact as rising of smoke that pollutes the air quality to damaging human health. Research on the concentration of pollutants emitted from forest fires and land in the region Palangkaraya was done by analyzing pollutants PM10, CO, SO<sub>2</sub>, O<sub>3</sub> and NO<sub>2</sub>. Daily average concentration of PM10 and CO compounds during strong El Niño events in 2002, 2004, and 2006 for 2000-2008, shows the maximum and minimum concentration increases compared to the annual average concentration. From the results show that for compounds of PM10 maximum concentrations was 1530.82 µg/m, far exceeding the maximum concentration value of the annual average that only worth of 590.25 µg/m<sup>3</sup>. Similarly to the minimum concentration was 426.07µg/m<sup>3</sup> while the annual average was106.91µg/m<sup>3</sup>. For compound of SO<sub>2</sub>, concentration increases beyond annual concentrations only occur at its maximum value. Furthermore, for compound O<sub>3</sub> and NO<sub>2</sub>, the maximum and minimum concentration average concentration does not exceed the maximum and minimum of annual average. Another result of the analysis showed that the increase in the concentration of PM10 and CO compounds in the event of forest fires as evidenced by increased concentrations of POM and CO in the Central Kalimantan region indicated by the Aqua/AIRS satellite data for 2004 and 2006, both spatially or annual time series.  Keywords: El Niño, forest fire, pollutant, and Southern Oscillation Index (SOI).</p>
<p>DDC 351.867  Dyah Ari Wulandari (Jurusan Teknik Sipil, Universitas Diponegoro)  Djoko Legono (Jurusan Teknik Sipil, Universitas Gajah Mada)  Suseno Darsono (Jurusan Teknik Sipil, Universitas Diponegoro)  <b>ANALYSIS OF INTEREST LEVEL WHICH INFLUENCED LIFE OF WONOGIRI RESERVOIR</b>  Ling. Trop., 6, 1 (2012): 51-60.</p> <p>Abstract: Wonogiri Reservoir located in Wonogiri Regency, Central Java Province is the largest reservoir at the Solo River. This reservoir has the function as flood control, irrigation, power generation, fisheries and tourism. In the year 2005, the JICA study team investigated sedimentation of the reservoir. They found effective storage of the reservoir decrease 13.4 % due to sedimentation. Decreasing reservoir storage will reduce availability of water for dry season operation. Ineffective sediment countermeasures will reduce viability of the reservoir up to half in the year 2062, a sediment storage reservoir with new spillway for sediment flushing is a possible effort for extending the life of the reservoir. The activities will create conflicts degree of interest between purposes of reservoir. The objective of this study is to predict degree of interest level for optimal management, using decision support systems method with the AHP (Analytical Hierarchy Process). Result of this study are alternative to flushing is the first priority and alternative to fisheries and tourism is the last priority. Further research is needed to obtain more definitive results weighting.  Keywords: conflict of interest, priority, reservoir management, and AHP.</p>	

<p>DDC 583.42 Endah Dwi Hastuti (Program Doktor Ilmu Lingkungan, Program Pascasarjana, Universitas Diponegoro) Sutrisno Anggoro (Fakultas Perikanan dan Ilmu Kelautan, Universitas Diponegoro) Rudhi Pribadi (Fakultas Perikanan dan Ilmu Kelautan, Universitas Diponegoro) DYNAMICS OF VEGETATION COMMUNITY STRUCTURE AND ENVIRONMENT PHYSICAL-CHEMICAL QUALITY CONDITION AT MANGROVE FOREST OF SEMARANG Ling. Trop., 6, 1 (2012): 61-72.</p> <p>Abstract: Mangrove vegetation is the type of vegetation susceptible to pressure from both the mainland and from the sea. These pressures impact on the abundance and vegetation community structures in mangrove ecosystem. Another factor closely associated with the mangrove ecosystem is a physico-chemical conditions such as temperature, sediment texture, pH, salinity, DO, N, P and organic matter. This study aims to determine the vegetation community structures of mangrove forest in Semarang and the following physico-chemical conditions of its environment. The research method used was an experimental survey. Observations indicate that the structure of mangrove forest vegetation communities vary in strata perpendicular to the coastline. Results of analysis showed the diversity index of stations A, B and C was 0,854; 1,192; and 1,370 for sapling and 0,599; 0,966; and 1,501 for tree. While the evenness index of 0,778; 0,860; and 0,851 for the strata and the sapling 0,546; 0,697, and 0,838 for the tree strata. Measurements of physical-chemical parameters showed temperatures of 28,9 °C; 30,8 °C; and 31,2 °C; sand 22,51%; 22,93%; and 92,5%; pH 5,8; 6,2; and 6,9; DO 0,8 mg/L; 2,3 mg/L; and 5,9 mg/L; N 0,307%; 0,517%; and 0,540% respectively. These conditions indicate the physico-chemical conditions of environmental are significantly different at different conditions of mangrove vegetation. Keywords: mangrove, vegetation, and community structu.</p>	<p>DDC 583.42 Rini Budihastuti (Program Doctor Ilmu Lingkungan Universitas Diponegoro) Sutrisno Anggoro (Fakultas Kelautan dan Perikanan Universitas Diponegoro) Suradi W.S. (Fakultas Kelautan dan Perikanan Universitas Diponegoro) THE EFFECT BETWEEN MANGROVE STANDS WITH FATTENING NILA ON ENVIROMENTAL SILVOFISHERY IN MANGUNHARJO, SEMARANG DISTRICT Ling. Trop., 6, 1 (2012): 73-80.</p> <p>Abstract: Coastal area has a very important function for life, either through economy, social and environment. One of the most important factors for coastal environmental continuity is the mangrove forest. In general, the mangrove forest nowadays is in heavily damage condition, and that disturbs the environmental conservation. Because of that condition, the best solution for the coastal area conservation is the wanamina (sylvofishery). Wanamina (sylvofishery) is an integrated activity between brackish water fishery and mangrove forest cultivation at the same location. The research is held in the north shore of Mangunharjo Sub-district, Tugu District of Semarang city. The purpose of this research is to obtain the result from wanamina (sylvofishery) using Rhizophora, Avicennia, without mangrove fattening Nila and also Nila (<i>Oreochromis niloticus</i>) using organic food. The research methods that used are field research and direct observation for 4 months. The experiment design used is random design complete with 3 treatments and 2 repetitions. The treatment applied in Rhizophora Mangrove, Avicennia Mangrove and (without mangrove). Obtained data is analyzed with balance design of variant analysis at 0.05% test level. The result obtained shows that the cultivated Nila (<i>Oreochromis niloticus</i>) in the location of Avicennia give the best result next is the Rhizophora and the last is the without mangrove. Keywords: mangrove, sylvofishery, fattening nila, and environmental perception.</p>
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