

40th Asian Conference on Remote Sensing (ACRS 2019)

Progress of Remote Sensing
Technology for Smart Future

Daejeon, South Korea
14 – 18 October 2019

Volume 1 of 4

ISBN: 978-1-7138-0326-3

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2019) by Korean Society of Remote Sensing (KSRS)
All rights reserved.

Printed with permission by Curran Associates, Inc. (2020)

For permission requests, please contact Korean Society of Remote Sensing (KSRS)
at the address below.

Korean Society of Remote Sensing (KSRS)
#507 Excon Venture Tower, 3
Eunhaeng-ro, Yeongdeungpo-gu
Seoul 07237, Korea

Phone: +82-2-785-0380
Fax: +82-70-7558-0380

<http://ksrs.or.kr/>

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

THE EFFECTIVENESS OF SPECTRAL FEATURES FOR BUILDING EXTRACTION USING GEOGRAPHIC OBJECT-BASED IMAGE ANALYSIS (GEOBIA)	1
<i>Athaya Atsir Frishila, Muhammad Kamal</i>	
GIS AND UAV AERIAL IMAGING APPLICATIONS FOR DURIAN PLANTATION MANAGEMENT	11
<i>Nor Fatin Syafiqah, Abdul Rashid Mohamed Shariff, Nik Norasma Che Ya</i>	
REMOTE SENSING BASED SOIL MOISTURE DOWNSCALING USING WEIGHTED COMPOSITE OF CCI AND GLDAS SOIL MOISTURE USING RANDOM FOREST	19
<i>Jaese Lee, Sumin Park, Jungho Im, Cheolhee Yoo</i>	
SPATIAL ANALYSIS AND GEOVISUALIZATION ON THE RELATIONSHIP BETWEEN THE GREEN LAND AND THE POPULATION IN THE URBAN AREA – A CASE STUDY IN TAIPEI CITY	21
<i>Chia-Yun Chao, Sendo Wang</i>	
ASSESSING LANDSCAPE VISIBILITY USING LIDAR, SAR DEM AND GLOBALLY AVAILABLE ELEVATION DATA: THE CASE OF BONGABONG, ORIENTAL MINDORO, PHILIPPINES	29
<i>Edwin R. Abucay, Yi-Hsing Tseng</i>	
GIS ASSISTED LAND USE STRUCTURE CHANGE ANALYSIS IN THE COLOMBO DISTRICT, SRI LANKA	37
<i>K. G. P. K. Weerakoon</i>	
COMPARISON OF COMPUTER-VISION-BASED PHOTOGRAMMETRIC SOFTWARE FOR RECONSTRUCTING VIRTUAL INDIGENOUS TRIBE	46
<i>Yu-Qi Lin, Sendo Wang</i>	
VISUALIZATION OF VIRTUAL INDIGENOUS TRIBES USING IMMERSIVE VIRTUAL REALITY TECHNOLOGY	56
<i>Tzu-Heng Chou, Sendo Wang</i>	
MODULATION TRANSFER FUNCTION COMPENSATION FOR OPTICAL SATELLITE IMAGE RESTORATION USING JOINT STATISTICAL MODEL IN CURVELET DOMAIN	66
<i>Soo Mee Jessica Wong, Su Wai Ng, Adhwa Amir Tan</i>	
SATELLITE IMAGE UPSCALING USING HIGH BOOST BI-CUBIC INTERPOLATION	76
<i>Sompong Liangrocapart, Suphongsa Khetkeeree, Chapkit Chansamorn, Parawata Thanakitvirul</i>	
DEFINING THE SPATIAL IMPACTS OF CHANGING THE YOUBIKE FEES: A CASE STUDY OF TAIPEI'S ELIMINATION OF THE "FIRST 30 MINUTES IS FREE" POLICY	78
<i>Cheng-Yen Wu, Chui-Sheng Chiu, Pei-Fen Kuo</i>	
MAPPING TRADITIONAL TERRITORIES OF TAIWANESE INDIGENOUS PEOPLE BY THE VOLUNTEERED GEOGRAPHIC INFORMATION SYSTEM	88
<i>Sendo Wang</i>	
GIS PLATFORM FOR AUGMENTING SPACE SITUATIONAL AWARENESS	89
<i>Panupat Horma, Supavit Nounkhaow, Nick Chamnong, Wasanchai Vongsantivanich</i>	
REAL-TIME WATER QUALITY MONITORING USING UNMANNED SURFACE VEHICLE WITH AUTOMATED PH INDEX MAPPING	96
<i>Alexander T. Demetillo, Evelyn B. Taboada</i>	
BATHYMETRIC MAPPING OF SHALLOW WATERS IN LIAN, BATANGAS USING UNMANNED AERIAL VEHICLE (UAV)	97
<i>Katelene Panlilio, Salvacion Mae Pedido, Roseanne Ramos, Ayin Tamondong</i>	
IMPROVEMENT OF AUTOMATIC COREGISTRATION OF MULTISENSOR ORTHOPHOTOS GENERATED FROM UNMANNED AERIAL VEHICLE USING EDGE SHARPENING	107
<i>Taeheon Kim, Kilim Lee, Won Hee Lee, Youkyung Han, Junho Yeom</i>	
ROAD SURFACE IMAGE MOSAICKING FROM NADIR VIDEO CAMERA ON UAV USING OPTIMIZED RESIZING-ROTATING NEIGHBOR FRAME	114
<i>Suphongsa Khetkeeree, Chapkit Chansamorn, Parawata Thanakitvirul, Sompong Liangrocapart</i>	
RIVERBED GRAIN SIZE ANALYSIS USING UAV IMAGES TECHNIQUES	118
<i>Kai-Chieh Hung, Jen-Yu Han</i>	
SOLUTION ANALYSIS OF SCALE FACTOR IN 3D SPATIAL SIMILARITY TRANSFORMATION	119
<i>You-Jing Liu, Jen-Jer Jaw</i>	

MODELING AND ESTIMATION OF AIR POLLUTANTS FROM VEHICLES IN YANGON, MYANMAR WITH GOOGLE TRAFFIC MAP	128
<i>Takashi Misumi, Wataru Takeuchi</i>	
THE 3S MAKER CONTEST PROGRAM PROMOTED BY CSPRS	134
<i>Yi-Hsing Tseng</i>	
EDUCATION AND RESEARCH STRATEGIES: ISSUES AND CHALLENGES	135
<i>Vyas Anjana</i>	
AN INTRODUCTION OF GEOMATICS EDUCATION IN NATIONAL CHENG-KUNG UNIVERSITY	137
<i>Chao-Hung Lin</i>	
ASSESSMENT OF SHADOW INDEX USING RAY TRACING BASED ON A VOXEL MODEL ON VARIOUS FOREST STRUCTURES	138
<i>Takumi Fujiwara, Wataru Takeuchi</i>	
ESTIMATION OF LEAF AREA INDEX FROM UAV MULTISPECTRAL INDICES AND MACHINE LEARNING MODELS	145
<i>Asniyani Nur Haidar Abdullah, Farrah Melissa Muharam, Zed Diyana Zulkafli, Khairudin Nurulhuda, Muhamad Faiz Che Hashim, Siti Najja Mohd Zad, Mohd Razi Ismail</i>	
EXTRAPOLATING THE SPATIAL DISTRIBUTION OF TAIWAN RED CYPRESS REVERSELY FROM "TERRAIN-SHELTERBELT" PROTECTING TAIWAN FIR	151
<i>Bao-Hua Shao, Chen-I Hsu, Chin-Jou Hsu, Ching Chuang, Nan-Chang Lo, Kai-Yi Huang</i>	
PASTURE BIOMASS ESTIMATION USING REMOTE SENSING TECHNOLOGY	155
<i>Batbileg Bayaraa, Akira Hirano, Myagmartseren Purevtseren, Battsengel Vandansambuu, Byambasuren Damdin</i>	
MAPPING OF FOREST COVER EXTENT AND CHANGE IN THE PHILIPPINES USING DECISION TREE CLASSIFICATION ON ALOS-1/2 PALSAR-1/2 MOSAIC DATA	156
<i>Mari Trix Estomata, Klaus Schmitt</i>	
QUANTIFYING IMPACT OF DEFORESTATION USING MULTI-SATELLITE AND MULTI-SPATIAL MODEL IN THE NORTH KOREA	166
<i>Chul-Hee Lim, Hyun-Ah Choi, Francesco Vuolo, Hyun-Woo Jo, Sujong Lee, Sle-Gee Lee, Woo-Kyun Lee</i>	
COMPLEMENTARY USE OF AIRBORNE LIDAR AND TERRESTRIAL LASER SCANNER TO ASSESS ABOVE GROUND BIOMASS/CARBON IN AYER HITAM TROPICAL RAIN FOREST	173
<i>Cora Jane C. Lawas, Yousif Ali Hussin, Evert Henk Kloosterman</i>	
DETECTION OF DEAD TRESS WITH REMOTE SENSING TECHNOLOGIES FOR ASSESSING PLANTED FORESTS	193
<i>Azlin Azmi, Norimaniah Mazelan, Mohd Fairuz Fuazi, Muhamed Kamal Azidy Musa</i>	
USING DUAL-POLARIZATION SENTINEL-1A FOR MAPPING VEGETATION TYPES IN DAKLAK, VIETNAM	203
<i>Hang Le Minh, Truong Vu Van, Tuan Tran Anh</i>	
ABOVEGROUND BIOMASS ESTIMATION OF MANGROVES IN SIARGAO ISLAND, PHILIPPINES USING SENTINEL-1 IMAGE	211
<i>Meriam Makinano-Santillan, Charlene G. Bolastig, Jojene R. Santillan</i>	
THE GLOBAL MANGROVE WATCH – MAPPING MANGROVE EXTENT AND CHANGE IN SOUTHEAST ASIA OVER 20 YEARS	221
<i>Ake Rosenqvist, Pete Bunting, Richard Lucas, Lammert Hilarides</i>	
DETECTION OF STRUCTURAL TREE DEFECTS USING THERMAL INFRARED IMAGING	223
<i>Coco Yin Tung Kwok, Man Sing Wong, Hon Li, Karena Ka Wai Hui, Florence Wan Yee Ko, Herman Yiu Kay Shiu, Zihan Kan</i>	
ASSESSMENT OF POPULATION EXPOSURE TO ESTIMATED PM10 CONCENTRATIONS IN MALAYSIA IN 2000, 2008 AND 2013	233
<i>Ameerah Su'Ad Abdul Shakor, Mohamad Iqbal Mazeli, Muhammad Alfatih Pahrol</i>	
IDENTIFYING POSSIBLE PLANNING INTERVENTIONS TO CONTROL THE INCREASE OF LAND SURFACE TEMPERATURE	241
<i>K. G. D. Lakmali, G. M. W. L. Gunawardena, Lakshika Meetiyagoda</i>	
IDENTIFYING HABITATS OF RED PANDA (AILURUS F. FULGENS) IN SAKTENG WILDLIFE SANCTUARY, BHUTAN IN MAXENT USING CLIMATE CHANGE SCENARIOS	252
<i>Sonam Tobgay, Natapon Mahavik</i>	
ASSESSMENT OF AIR QUALITY USING PORTABLE SENSORS IN TOKYO METRO STATIONS AND UNDERGROUND MALL	261
<i>Deepanshu Agarwal, Wataru Takeuchi</i>	
ESTIMATING PM10 CONCENTRATIONS IN THE MAIN ROUTES OF HANOI, VIETNAM BY USING VNREDSAT-1 DATA	268
<i>Nguyen Nhu Hung, Le Minh Hang, Tran Van Anh, Du Vu Viet Quan, Van-Manh Pham</i>	

A GEOINFORMATICS-BASED MODELING AND MAPPING TECHNIQUES FOR AN INTEGRATED SURFACE WATER QUALITY MONITORING AND ASSESSMENT	277
<i>Michelle V. Japitana, Alexander T. Demetillo, Evelyn B. Taboada, Chul-Soo Ye, Marlowe Edgar C. Burce</i>	
ASSESSMENT OF POPULATION EXPOSURE TO PM2.5 AND LONG-TERM MORTALITY IN MALAYSIA	284
<i>Muhammad Alfatih Pahrol, Wan Rozita Wan Mahiyuddin, Rafiza Shaharudin, Mohamad Iqbal Mazeli, Noraishah Mohammad Sham, Ameerah Su'Ad Abdul Shakor, Mohd Talib Latif, Mazrura Sahani, Nurul Amalin Fatihah Kamarul Zaman, Kasturi Devi Kanniah, Norlen Mohamed</i>	
LINKAGE BETWEEN GREEN SPACE STRUCTURES AND MENTAL DISORDER IN TAIWAN	291
<i>Hao-Ting Chang, Chih-Da Wu, Huey-Jen Su</i>	
MAPPING PADDY FIELD IN EAST JAPAN USING SENTINEL-1 TIME SERIES ASSISTED BY SENTINEL-2	312
<i>Shimpei Inoue, Chinatsu Yonezawa, Akihiko Ito</i>	
APPLICATION OF REMOTE SENSING AND CROP MODELING FOR RICE IN ANDHRA PRADESH, INDIA	320
<i>Emma Quicho, Tri Setiyono, Aileen Maunahan, Sushree Satapathy, Ponnuram Ganesan, Kranthi Kumar, Ramohan Reddy, Gene Romuga, Cornelia Garcia, Arnel Rala, Sunil Medida, Prasuna Podila, Prabhu Prasadini, Luca Gatti, Francesco Holecz</i>	
EXTRACTION OF ONION FIELDS INFECTED BY ANTHRACNOSE-TWISTER DISEASE IN SELECTED MUNICIPALITIES OF NUEVA ECIJA USING UAV IMAGERIES AND OBJECT BASED IMAGE ANALYSIS	328
<i>Ronaldo T. Alberto, Ariel R. Biagtan, Miguelito F. Isip, Jeremy Cariño E. Rivera</i>	
MAPPING RICE PADDY CROPPING PATTERNS AND DROUGHT IMPACTS IN UGANDA USING MULTI-TEMPORAL MODIS IMAGES FROM 2001 TO 2018	335
<i>Miwa Aoyama, Wataru Takeuchi</i>	
ASSESSMENT OF LEAF CHLOROPHYLL CONTENT, LEAF AREA INDEX AND YIELD OF CORN (ZEA MAYS L.) USING LOW ALTITUDE REMOTE SENSING	340
<i>Rizza Lorena P. Espenido, Ronaldo B. Saludes, Moises A. Dorado, Pompe C. Sta. Cruz</i>	
DETECTION AND DIFFERENTIATION OF SELECTED RICE DISEASES USING HYPERSPECTRAL DATA	350
<i>Jean Rochielle F. Mirandilla, Enrico C. Paringit</i>	
DRONE SERVICES AND APPLICATION FOR PADDY FERTILIZING AND OIL PALM MAPPING FOR CLIMATE CHANGE	360
<i>Norsida Man, Hidayah Hassim, Nabara Isah Sehu, Nik Norasma</i>	
ASSESSMENT OF DROUGHT IMPACT ON RICE PADDY FIELD IN NORTH KOREA FROM 2007 TO 2019	370
<i>Etsuko Nakazono, Wataru Takeuchi</i>	
TARGETING DISSEMINATION OF SUBMERGENCE TOLERANT RICE IN ASSAM, INDIA: A GEOMATICS APPROACH	376
<i>D. D. Sinha, A. N. Singh, Tri D. Setiyono, U. S. Singh</i>	
REMOTE SENSING MONITORING OF CROP DISEASE BASED ON FUSION OF DIFFERENT IMAGE SCALES	386
<i>Wei-Guo Li</i>	
THE GEOGRAPHICAL STUDY ON DROUGHT ASSESSMENT OF THE CENTRAL DRY ZONE IN MYANMAR (CASE STUDY ON MINBU TOWN, MAGWAY REGION)	396
<i>Khin Mar Yee, Mu Mu Than, Kyi Lint, May Myat Thu, Mar Lar Han, Moe Thidar Htwe</i>	
ANALYSIS ON DAMAGED AREAS BY WILDFIRE ON GANGWON PROVINCE IN 2019 USING KOMPSAT-3 IMAGES	404
<i>Yeji Kim, Jong Min Yeom, Hongtak Lee, Hyun-Ok Kim, Tae-Byeong Chea, Jeongho Lee</i>	
COMPARISON OF SOIL EROSION BETWEEN SUB-WATERSHEDS OF SHIHMEN RESERVOIR IN TAIWAN	406
<i>Chih-Hung Wang, Walter Chen</i>	
ASSESSMENT OF FLOOD HAZARD USING GEOSPATIAL DATA AND FREQUENCY RATIO MODEL IN SUKHOTHAI PROVINCE, THAILAND	414
<i>Kamonchat Seejata, Aphitha Yodying, Sasithon Chatsudarat, Polpreecha Chidburee, Nattapon Mahavik, Charatdao Kongmuang, Sarintip Tantane</i>	
PINE WOOD NEMATODE DISEASE WOOD EXTRACTION USING TRIPLESAT SATELLITE IMAGES BASED ON RICHER CONVOLUTIONAL FEATURES	424
<i>Dongyang Yan, Ting Chen, Pengfei Yan, Wenwen Qi, Yuexia Qiao, Jianjun He, Chong Chen</i>	
COMPARISON OF BINGHAM MINE LANDSLIDE DSMS USING PLEIADES TRI-STEREO SATELLITE DATA	434
<i>Philip Cheng</i>	

BACKSCATTERING ANALYSIS OF TYPHOON-INDUCED LANDSLIDES USING SENTINEL-1 C-BAND SAR DATA	443
<i>Yu-Ching Huang, Shou-Hao Chiang</i>	
MAPPING SECONDARY SURFACE DEFORMATION RELATED TO THE 2018 SULAWESI EARTHQUAKE VIA SYNTHETIC APERTURE RADAR OFFSET TRACKING	444
<i>Won-Kyung Baek, Hyung-Sup Jung</i>	
A FIRE RISK MAP FOR PROTECTED AREAS OF MONGOLIA: TUJIN NARS NP, KHAN KHENTII SPA AND BOGD KHAN SPA	449
<i>Elbegjargal Nasanbat, Ochirkhuyag Lkhamjav, Amanjol Bulkhbai, Chuluumbaatar Tsevee-Oirov, Odbayar Mishigdorj, Erdenetuya Magsar</i>	
THE STUDY OF LANDSLIDE SUSCEPTIBILITY USING GIS BASED ON RAINFALL DERIVING FROM TRMM OVER NORTHERN THAILAND	461
<i>Sasithon Chatsudarat, Aphittha Yodying, Kamonchat Seejata, Polpreecha Chidburee, Nattapon Mahavik, Charatdao Kongmuang, Sarintip Tantanee</i>	
OBSERVATIONS AND ANALYSIS OF BEIMEN SANDBANK SURFACE CHANGE USING MULTI-TEMPORAL UAV DATASETS	470
<i>Ruli Andaru, Jiann-Yeou Rau</i>	
DESIGN AND PERFORMANCE OF A WEARABLE GEOSPATIAL DATA ACQUISITION SYSTEM	479
<i>Linh Giang Do, Kanghyeok Choi, Changjae Kim, Hyunmook Lim, Seil Kim</i>	
ACCURACY ANALYSIS OF PHOTOGRAMMETRIC STEREO VISUAL ODOMETRY ACCORDING TO IMAGING GEOMETRY	486
<i>Sung-Joo Yoon, Taejung Kim</i>	
THE STRATEGY FOR MULTI-VIEW DENSE IMAGE MATCHING AND POINT CLOUD REFINEMENT	494
<i>Hsuan-Hsuan Liu, Jen-Jer Jaw</i>	
DEFORMATION MONITORING FOR HISTORICAL SITE USING CLOSE-RANGE PHOTOGRAMMETRY TECHNIQUE	503
<i>Pei-An Lin, Yi-Hsing Tseng</i>	
STEREO VISUAL NAVIGATION BASED ON NETWORK ADJUSTMENT OF RELATIVE ORIENTATION PARAMETERS	511
<i>Kuan-Ying Lin, Yi-Hsing Tseng, Kai-Wei Chiang</i>	
A HYBRID APPROACH FOR BUILDING CANDIDATE EXTRACTION FROM HIGH-RESOLUTION SATELLITE IMAGERY	519
<i>Hyowon An, Changjae Kim, Hyosung Lee, Daesik Shin</i>	
SKELETON-BASED AUTOMATIC ROAD NETWORK EXTRACTION FROM AN ORTHOPHOTO COLORED POINT CLOUD	526
<i>Elyta Widyaningrum, Roderik C. Lindenbergh</i>	
WESTERN LAMPUNG PROBABILISTIC TSUNAMI HAZARD MODEL: INVESTGATIONS BY AERIAL PHOTOGRAMMETRY AND REMOTE SENSING DATA	536
<i>Arliandy P. Arbad, W. Takeuchi, S. Jonathan, M. Jamilah, Achmad Ardy, Chusna Meimuna</i>	
MAPPING TRAFFIC SIGNBOARD FROM MOBILE MAPPING SYSTEMS USING DEEP LEARNING APPROACH	544
<i>Pei-Cheng Chen, Tee-Ann Teo</i>	
SPATIAL DISTRIBUTION FOR THE ANCIENT MOUNTED TOMBS USING UAV UAV DIGITAL MAPS IN FUKUOKA	551
<i>Yukiya Taniguchi, Susumu Ogawa, Toshiro Harunari</i>	
IMPROVING THE UNDULATION ESTIMATION ACCURACY BY GENETIC ALGORITHM BASED LEAST SQUARES SUPPORT VECTOR MACHINE	559
<i>Chia-Hsin Chen, Lao-Sheng Lin</i>	
SPATIAL DISTRIBUTION ANALYSIS OF LEAFMINER (LYRIOMYZAE TRIFOLII BURGESS) IN ONION GROWING AREAS OF NUEVA ECIJA USING GEOGRAPHIC INFORMATION SYSTEM (GIS)	567
<i>Ronaldo T. Alberto, Ariel R. Biagtan, Miguelito F. Isip</i>	
ASSESSMENT OF HUMAN MOBILITY FROM TAXI GPS PROBE DATA IN BANGKOK, THAILAND	576
<i>Songkorn Siangsuebchart, Sarawat Ninsawat, Apichon Witayangkurn, Surachet Pravinvongvuth</i>	
SPATIAL ANALYSIS OF THE AIR POLLUTION EFFECT ON DOMESTIC VIOLENCE AND ROBBERY IN NEW SOUTH WALES	586
<i>I Gede Brawiswa Putra, Pei-Fen Kuo, Hsu-Hsien Chen</i>	

GEOEDGE MAP ENGINE: SPATIAL DATA SHARING & VISUALIZATION TOOL FOR COLLABORATIVE MAP EDITING	596
<i>Anuradha Rajanayake, Dimesh Dharmathilake</i>	
STUDY ON MITIGATING THE SYSTEMATIC ERRORS BETWEEN THE ANNOUNCED ORTHOMETRIC HEIGHTS IN DIFFERENT YEARS BY CORRECTOR SURFACE MODELS	604
<i>Chia-Hsin Chen, Lao-Sheng Lin, Wei-Jun Wang, Yan-Yi Wu</i>	
GIS-BASED METHODOLOGY ON TECHNO-ECONOMIC POTENTIAL ASSESSMENT OF SUGARCANE RESIDUES IN MEDELLIN, CEBU, PHILIPPINES	613
<i>Wenyville Galang, Ian Dominic Tabañag, Michael Loretero</i>	
IMPROVING SENSOR MODEL ACCURACY USING MULTI-BAND AND MULTI-PATCH BASED MARCHING	623
<i>Jong-Hwan Son, Wansang Yoon, Hyeongjun Park, Taejung Kim</i>	
ESTIMATION OF GLOBAL IMAGE FUSION PARAMETERS FOR KOMPSAT-3A	631
<i>Sung-Hwan Park, Hyung-Sup Jung</i>	
ALGORITHM AND SYSTEM DEVELOPMENT FOR AUTOMATION-BASED GEOSPATIAL FEATURE EXTRACTION USING HIGH RESOLUTION SATELLITE IMAGERY	636
<i>Jong-Hun Lee, Dong-Gook Lee, Dae-Sick Bang, Sung-Geun Park, Hyun-Jik Lee</i>	
ACCURACY ANALYSIS OF USING INTERSECTION OVER UNION AT NORMALIZED DIFFERENCE VEGETATION INDEX	640
<i>Hyun Choi</i>	
OBJECT-BASED CHANGE DETECTION OF VHR IMAGERY BASED ON EXTENSION OF VARIOUS PIXEL-BASED METHODS	644
<i>Sejung Jung, Won-Hee Lee, Youkyung Han</i>	
DTM GENERATION FROM KOMPSAT-3A STEREO IMAGES BY UTILIZING AN EXISTING LOW-RESOLUTION DTM	649
<i>Heeran Ahn, Taejung Kim</i>	
A STUDY ON URBAN CHANGE DETECTION USING STEREO SATELLITE DATA	656
<i>Yeong-Jae Jang, Jae-Hong Oh</i>	
MONITORING OF 3-D LAND SUBSIDENCE INTEGRATING PSI AND GPS DATA BY WLS	660
<i>Takaya Kusakabe, Junichi Susaki, Takuma Anahara</i>	
ASSESSMENT OF INTERFEROMETRIC SAR-BASED DIGITAL ELEVATION MODELS	665
<i>Yen-Yi Wu, Shih-Yuan Lin, Hsuan Ren</i>	
ASSESSING THE OPTIC AND NON-OPTIC REMOTE SENSING DATA; A VALIDATION OF SOIL WETNESS APPROACH	675
<i>Dewayany Sutrisno, Mulyanto Darmawan, Ati Rahadiati</i>	
DETERMINATION OF LAND COVER CHANGE BY MULTI-TEMPORAL RADAR IMAGERY	685
<i>Tran Van Anh, Le Minh Hang, Nguyen Dinh Duong</i>	
GEOMETRIC CORRECTION AND SOIL VOLUME ESTIMATION IN DEBRIS FLOW AREAS USING LIDAR DATA	694
<i>Po-Jui Huang, Min-Lung Cheng, Masashi Matsuoka, Hiroyuki Miura</i>	
COMPARATIVE ANALYSIS OF EXTRACTION ACCURACY OF FIRE DETECTION ALGORITHMS IN NORTHERN OF CHINA	702
<i>Guohong Li, Chang Guo, Ke Liu, Yuanping Liu, Yujing Wang</i>	
OBJECT BASED HYPERSPECTRAL IMAGE ANALYSIS FOR CADASTRAL MAPPING	714
<i>Kangjoon Cho, Yongil Kim, Taehong Kwak</i>	
SHADOW BASED NEW REMOTE SENSING METRICS FOR MOSO BAMBOO BIOMASS PREDICTION USING UNMANNED AERIAL VEHICLE PHOTOGRAMMETRIC DATA	720
<i>Yi-Ta Hsieh, Yang-Bo Deng, Regassa Terefe Urga, Ji-An Liu, Kun-Yong Yu</i>	
SPECTRAL ANALYSIS OF FLAMING AND NON-FLAMING INFRARED EMITTERS WITH NIGHTTIME VIIRS DATA: PRELIMINARY RESULTS	726
<i>Christopher D. Elvidge, Mikhail Zhizhin, Kimberly Baugh, Feng Chi Hsu, Tilottama Ghosh</i>	
COMPARISON OF OBJECT-BASED IMAGE CLASSIFICATION OF WORLDVIEW-2 AND SMALL FORMAT AERIAL PHOTOGRAPHY IMAGES FOR VEGETATION MAPPING	731
<i>Zulfikri Isnaen, Muhammad Kamal, Denny Wijaya Kusuma</i>	
IMPROVEMENT OF SPATIAL INTERPOLATION ACCURACY OF DAILY MAXIMUM AIR TEMPERATURE USING STACKING ENSEMBLE TECHNIQUE	741
<i>Dongjin Cho, Cheolhee Yoo, Jungho Im, Yeonsu Lee</i>	
BIG SENTINEL DATA PROCESSING FOR MONITORING GROUND DEFORMATIONS	743
<i>Ioannis Papoutsis, Charalampos Kontoes, Alexis Apostolakis</i>	

FEASIBILITY OF EXPLOITATION OF 3D CITY MODEL CREATED FROM LIDAR DATA AND AERIAL IMAGES IN APPLICATIONS FOCUSING ON CHAOPHRAYA RIVER BASIN AND THE AREA OF THE EASTERN ECONOMIC CORRIDOR (EEC) OF THAILAND	757
<i>Nobphadon Suksangpanya, Chisaphat Supunyachotsakul</i>	
IMPACT OF URBANIZATION ON LAND SURFACE TEMPERATURE USING DEEP LEARNING APPROACH	767
<i>Manikandan Sathianarayanan, Dr, Pai-Hui Hsu</i>	
ASSESSMENT OF THE RELATIONSHIP BETWEEN THE RAINFALL AND THE LAND SURFACE TEMPERATURE USING THE MULTI-TEMPORAL LANDSAT SATELLITE IMAGES ACQUIRED IN SEOUL	773
<i>Yun-Jae Choung, Dae-Ik Kang, Hye-Ji Park, Myung-Hee Jo</i>	
SPATIO-TEMPORAL GROWTH PATTERN ANALYSIS AND URBAN SIMULATION IN COLOMBO CITY USING OPEN SOURCE SOFTWARE TOOLS - APPLICATION OF FUTURES SIMULATION MODEL	776
<i>Pavithra Jayasinghe, Venkatesh Raghavan, Nirosan Sanjaya, Go Yonezawa</i>	
VOLUME COMPUTATION OF MUNICIPAL LANDFILL – COMPARING GNSS AND UAV	785
<i>Petr Šádek, Juraj Struhár</i>	

VOLUME 2

USE OF UAV AND GIS FOR INFRASTRUCTURE MANAGEMENT IN CAMBODIA	793
<i>Bhuvneshwar Prasad Sah, James Kazumori Watson, Samnang Chea, Takayuki Tsuchida</i>	
PATCH-BASED LAND COVER CHANGE DETECTION USING MULTITEMPORAL AND MULTIVARIATE ALTERATION DETECTION OF OPTICAL SATELLITE IMAGERY	801
<i>Bo-Yi Lin, Chao-Hung Lin</i>	
TREND ANALYSIS OF URBAN HEAT ISLAND INTENSITY ACCORDING TO URBAN AREA CHANGE IN ASIAN MEGA CITIES	811
<i>Kyungil Lee, Yoonji Kim, Hyun Chan Sung, Raeik Jang, Jieun Ryu, Seong-Woo Jeon</i>	
URBAN EXPANSION SCENARIOS BASED ON ARTIFICIAL NEURAL NETWORK (CASE OF ERDENET CITY, MONGOLIA)	821
<i>Myagmarseren Purevtseren, Lodoiravsal Choimaa, Ganpurev Dashlegtseg, Myagmarjav Indra, Bazarkhand Tsegmid</i>	
PREDICTION OF HEAT WAVE OVER SOUTH KOREA USING DEEP LEARNING WITH TELECONNECTION FACTORS	828
<i>Yeonsu Lee, Cheolhee Yoo, Dongjin Cho</i>	
CHARACTERIZE THE SPATIAL-TEMPORAL VARIATIONS OF URBAN HEAT ISLAND INTENSITY USING A LAND USE REGRESSION APPROACH	829
<i>Chiao-Ying Chen, Chih-Da Wu, Uen-Ching Ng, Shih-Chun Candice Lung</i>	
SCALABLE DISTRIBUTED RANDOM FOREST CLASSIFICATION FOR PADDY RICE MAPPING	836
<i>Vasileios Sitokostantinou, Ioannis Papoutsis, Haris Kontoes, Thanassis Drivas</i>	
CHLOROPHYLL-A CONCENTRATION RETRIEVAL USING CONVOLUTIONAL NEURAL NETWORKS IN LAGUNA LAKE, PHILIPPINES	846
<i>Muhammad Aldila Syariz, Chao-Hung Lin, Manh Van Nguyen, Lalu Muhamad Jaelani, Ariel C. Blanco</i>	
USING FULLY CONVOLUTIONAL NETWORKS AND PLÉIADES SATELLITE IMAGERY WITH PRE-TRAINED VGG-19 MODEL TO DETECT IMPERVIOUS SURFACE IN FARMLAND	854
<i>Wei Li, Chi-Kuei Wang</i>	
MANGROVES CHANGE DETECTION USING SUPPORT VECTOR MACHINE ALGORITHM ON GOOGLE EARTH ENGINE (A CASE STUDY IN PART OF GULF OF BONE, SOUTH SULAWESI, INDONESIA)	864
<i>William Krista Mahendra, Ilham Jamaluddin, Muhammad Kamal</i>	
3D SCENE RECONSTRUCTION FROM MULTI-VIEW STEREO IMAGES USING MACHINE LEARNING	872
<i>Ya-Chu Tsao, Pai-Hui Hsu</i>	
DEEP LEARNING BASED TROPICAL CYCLONE INTENSITY MONITORING AND FORECASTING	882
<i>Juhyun Lee, Cheolhee Yoo, Dongjin Cho, Kyoungmin Kim, Jungho Im</i>	
AGRICULTURAL CROP TYPE MAPPING USING OBJECT-BASED IMAGE ANALYSIS WITH ADVANCED ENSEMBLE LEARNING ALGORITHMS	883
<i>Taskin Kavzoglu, Ismail Colkesen, Hasan Tonbul</i>	

AUTOMATIC DISCRIMINATIVE FEATURE EXTRACTION USING CONVOLUTIONAL NEURAL NETWORK FOR REMOTE SENSING IMAGE CLASSIFICATION	891
<i>Akhtar Jamil, Bulent Bayram</i>	
COMPARISON OF GOOGLE EARTH ENGINE (GEE)-BASED MACHINE LEARNING CLASSIFIERS FOR MANGROVE MAPPING	900
<i>Muhammad Kamal, Ilham Jamaluddin, Artha Parela, Nur Mohammad Farda</i>	
DEEP LEARNING BASED PANSHARPENING USING A LAPLACIAN PYRAMID.....	908
<i>Doyoung Jeong, Yongil Kim</i>	
AUTOMATIC EXTRACTION OF TRAINING SETS USING AIS IN CNN FOR SHIP DETECTION FROM SAR IMAGE	916
<i>Juyoung Song, Duk-Jin Kim, Ki-Mook Kang</i>	
DOMAIN ADAPTATION FOR 2D/3D CHANGE DETECTION IN VHR IMAGERY VIA CALIBRATION OF CONVOLUTIONAL NEURAL NETWORK UNDER PRIOR PROBABILITY SHIFT	921
<i>Hunsoo Song, Anjin Chang, Junho Yeom, Jinha Jung, Yongil Kim</i>	
CLASSIFICATION OF ECONOMIC CHARACTERISTICS BASED ON KLASSEN TYPOLOGY USING MULTILAYER PERCEPTRON NEURAL NETWORK	931
<i>Nurrahim Dwi Saputra, Tanakorn Sritarapipat, Songkot Dasananda</i>	
SUSPENDED SEDIMENT DYNAMICS IN THE CHI-MUN RIVER BASIN, THAILAND: IMPACT OF CLIMATE CHANGE AND ANTHROPOGENIC ACTIVITIES	939
<i>Khruewan Champangern, Witchayada Prasertsri, Tiwakorn Wuttiapan Nattaporn Soontorn, Patiwet Chalermpong, Tanita Suepa</i>	
ON THE APPLICABILITY OF SATELLITE-BASED RAINFALL ESTIMATES FOR THE DETERMINATION OF MONSOON ONSET DATE: CASE STUDY IN THE AYEYARWADY DELTA, MYANMAR.....	948
<i>Akira Hirano, Swe Swe Mar, May Toe Aung Myint, Hla Moe Khaing</i>	
ASSESSMENT OF MODIS LAND SURFACE TEMPERATURE DATA AGAINST GROUND METEOROLOGICAL DATA FOR THE WEST COAST OF PENINSULAR MALAYSIA	954
<i>Nurul Iman Saiful Bahari, Farrah Melissa Muharam, Zed Zulkaflri, Norida Mazlan, Nor Azura Husin</i>	
30 YEARS NATIONAL SCALE SEAGRASS MAPPING IN VIETNAM WITH LANDSAT AND SENTINEL IMAGERY ON GOOGLE EARTH ENGINE	962
<i>Xuan Truong Trinh, Wataru Takeuchi</i>	
WAVE BASED APPROACH TO COASTAL BATHYMETRY- CASE STUDIES OF COASTAL REGIONS IN INDIA.....	970
<i>Ankita Misra, Balaji Ramakrishnan, Amit More</i>	
A STUDY ON THE ESTIMATION OF FARMED MARINE PRODUCT OUTPUT USING AERIAL IMAGES - A CASE STUDY ON BUSAN LAVER FARMING?	980
<i>Gyeong-Min Kang , Hye-Ji Park , Myung-Hee Jo</i>	
INTEGRATION OF SATELLITE-BASED ENVIRONMENTAL DATA FOR SKIPJACK TUNA FISHING GROUND DETERMINATION	986
<i>Adillah Alfatimah, Hone-Jay Chu</i>	
SHIP DETECTION FROM X-BAND SAR IMAGES USING MULTI-LEVEL MULTI-SCALE FEATURE PYRAMID NETWORK.....	995
<i>Seong-Jae Hong, In-Jeong Hwang, Hyung-Sub Jung</i>	
APPLICATION OF REMOTE SENSING TO ASSESS CHANGES IN SHORELINE AND LEVEL OF RIVERBED UNDER THE PRESSURE OF SAND MINING ACTIVITIES.....	1000
<i>Hang Thanh Thi Doan, Thao Thanh Tong, Duyen My Chau Nguyen, Long Ta Bui</i>	
INVESTIGATION OF THE WAVE ENERGY POTENTIAL IN BLACK SEA BY MEANS OF SATELLITE DATA	1010
<i>Mehmet Cihan Aktas, Dursun Zafer Seker</i>	
CANOPY COVER ESTIMATION BASED ON SUPPORT VECTOR REGRESSION DERIVED FROM LIDAR & LANDSAT 8 OLI.....	1019
<i>Sahid Hudjimartsu , Felliks Tampinongkol , Yoga Rudianto , Yudi Setiawan , Lilik Budi Prasetyo</i>	
LASER RANGING CORRECTION UNDER MIXED PIXELS EFFECT	1027
<i>Chia-Mien Chang, Jen-Jer Jaw</i>	
LIDAR SPATIAL RESOLUTION INTERPOLATION USING COLOR SIMILARITY OF OPTICAL IMAGE FOR ROAD SURFACE SURVEYING	1037
<i>Parawata Thanakitvivil , Sompong Liangrocapart , Suphongsak Khetkeeree, Chapkit Chansamorn</i>	
CLASSIFICATION OF LIDAR POINT CLOUDS BASED ON THE 2D CELLS.....	1045
<i>Kottage Saumya Denuwan Jayasundara, Sanka Perea, Nalani Perera</i>	

AUTOMATED ROAD CENTERLINES EXTRACTION FOR HIGH-DEFINITION MAP USING MOBILE LIDAR SYSTEM	1055
<i>Shao-Wei Huang, Tee-Ann Teob</i>	
H2020 EOPEN EASING COPERNICUS DATA & SERVICE EXPLOITATION	1056
<i>Leslie Gale, Bernard Valentin, Hakim Boulahya, Guido Vingione, Gabriella Scarpino, Laurence Marzell, Tudor Pettengell, Ilias Gialampoukidis, Stelios Andreadis, Stefanos Vrochidis, Ioannis Kompatsiaris, Dennis Hoppe, Li Zhong, Michele Ferri, Daniele Norbia</i>	
POINT CLOUDS OVER TETIAROA – 3D MODELING OF A TROPICAL ISLAND BY TOPO-BATHYMETRIC LIDAR	1066
<i>Serkan Ural, Armin Gruen, Sultan Kocaman</i>	
LOW-COST LIDAR APPLICATION ON UNMANNED AERIAL VEHICLE FOR ROAD SURFACE SURVEY: FEASIBILITY STUDY	1076
<i>Chapkit Chansamorn , Parawata Thanakitivirul , Sompong Liangrocapart, Suphonsa Khetkeeree</i>	
A MEMETIC ALGORITHM FOR GENERATING SPECTRAL INDICES FOR REMOTELY SENSED IMAGERY	1083
<i>Ivan Marc H. Escamos, Maria Art Antonette D. Clariño, Joseph Anthony C. Hermocilla Jaderick P. Pabico , Cristino L. Tiburan, Jr.</i>	
CLOUD REMOVAL OF GAOFEN-5 VNIR HYPERSPECTRAL DATA USING AUXILIARY MULTISPECTRAL DATA VIA RESIDUAL NEURAL NETWORKS	1093
<i>Mingyuan Peng, Lifu Zhang, Xuejian Sun, Yi Cen</i>	
THE MODULATION TRANSFER FUNCTION MEASUREMENT METHOD VIA USING KERNEL ESTIMATION FROM SATELLITE IMAGE	1101
<i>Yu-Lin Tsai , Kuo-Hsien Hsu, Yun-Shan Lee, Shiau-Jing Liu</i>	
A SPECTRAL-PRESERVING PANSHARPENING METHOD FOR MULTISENSOR SATELLITE IMAGERY	1107
<i>Xiaojing Huang, Soo Chin Liew, Leong Keong Kwoh</i>	
TSUNAMI SHELTER LOCATION ALLOCATION BY APPLYING A HEURISTIC ALGORITHM TO RESIDENTIAL AND FLOATING POPULATION DATA	1113
<i>Junsu Bae, Hong-Gyoo Sohn, Joon Heo, Sangkyun Kim, Mi-Kyeong Kim</i>	
GIS BASED DOCUMENTATION OF THE MONUMENTAL TREE INVENTORY IN ISTANBUL	1117
<i>Abdulkadir Baytimur, Dursun Zafer Seker</i>	
A WEB GIS-BASED VISUALIZATION AND ANALYTICAL PLATFORM FOR NEAR-REAL TIME FLOOD CHARACTERIZATION, FORECASTING AND IMPACT ASSESSMENT	1123
<i>Jojene R. Santillan, Edsel Matt O. Morales, Meriam Makinano-Santillan, Arthur M. Amora, Jennifer T. Marqueso, Amor L. Gingo</i>	
VALIDATION USING NATIONAL LAND NUMERICAL INFORMATION ON THE FLOOD RATE ESTIMATED BY MICROWAVE RADIOMETER	1133
<i>Yukiya Taniguchi</i>	
A PERSONALIZED GEOWEB SEARCH ENGINE BASED ON USER INTENT RECOGNITION	1134
<i>Regita Pramesti Nur Cahyani, Chih-Yuan Huang</i>	
IMPLEMENTING GIS FOR AIR NAVIGATION AIDS INFRASTRUCTURE OPTIMIZATION	1144
<i>Piyaparn Khasuwon, Kittisak Phaebua, Supatcha Chaimatanan, Akkarat Boonpoonga</i>	
PARTICIPATORY GIS TO VERIFY THE BOUNDARIES BETWEEN FOREST AREAS AND CUSTOMARY PEOPLE'S TERRITORIES (CASE STUDY: KASEPUHAN CIPTEGELAR, THE SUNDANESE CUSTOMARY PEOPLE)	1152
<i>Fahrul Hidayat , Yogyrema Setyanto Putra , Guridno Bintar Saputro , Rizka Windiasuti</i>	
DEVELOPMENT OF THE GLOCAL MONITORING SYSTEM	1161
<i>Kohei Cho, Osamu Uchida, Keisuke Utsu</i>	
ESTIMATION OF CLOUD OPTICAL PROPERTIES AND SURFACE SHORTWAVE RADIATION FROM HIMAWARI-8 SATELLITE DATA: INFLUENCE OF HEAVY AEROSOL ON CALCULATION OF SHORTWAVE RADIATION IN CHINA	1169
<i>Husi Letu, Run Ma, Huazhe Shang, Tianxing Wang, Liangfu Chen, Jiancheng Shi</i>	
RATING THE EFFECTIVENESS OF FISHERY CLOSURES USING VIIRS BOAT DETECTION DATA	1170
<i>Christopher D. Elvidge, Tilottama Ghosh, Kimberly Baugh, Feng Chi Hsu, Mikhail Zhizhin</i>	
ENVIRONMENTAL MONITORING USING PHILIPPINES' DIWATA-2: A CASE STUDY IN LAGUNA DE BAY	1177
<i>Gay Jane Perez, Mark Jayson Felix, Shielo Namuco, Francisco Felicio, Harry Merida, Kaye Kristine Vergel, Ellison Castro, Joel Joseph S. Marciano, Jr. Ellison Castro, Joel Joseph S. Marciano, Jr.</i>	
HYPERSPECTRAL PROPERTIES OF LEAVES ACCORDING TO DIFFERENT N FERTILIZATION REGIMES AND LEAF ORIENTATION IN WHEAT	1183
<i>Gi-Eun Song, Seung-Ha Lee, Yeong-Hun Lee, Jae-Gyeong Jung, Sang-In Shim</i>	

ANOMALOUS CLIMATIC PATTERN ANALYSIS USING SEA LEVEL ANOMALY DATA IN KOREAN PENINSULA	1184
<i>Do-Hyun Hwang, Suho Bak, Unuzaya Enkgjargal, Hong-Joo Yoon</i>	
CLASSIFYING VERTICAL STRUCTURE OF HARAE-RI FOREST IN JEJU ISLAND , KOREA FROM OPTIC AND RADAR SATELLITE IMAGES USING ARTIFICIAL NEURAL NETWORK	1185
<i>Yong-Suk Lee, Won-Kyung Baek, Hyung-Sub Jung</i>	
SPECTRAL SIMULATION ON REMOTE SENSING REFLECTANCE OF MIXED WATER WITH PETROLEUM AND SANDS USING HYDROLIGHT	1186
<i>Weijian Luo, Miaofen Huang, Junjie Yang, Bingcai Chen, Yang Zhuang</i>	
IMPROVING SPATIAL DISTRIBUTION OF GROWING STOCK VOLUME USING MODIS SATELLITE IMAGERIES AND GEOSPATIAL INFORMATION	1187
<i>Sungeun Cha, Hyun-Woo Jo, Cholho Song, Woo-Kyun Lee</i>	
SPATIAL ANALYSIS BASED CHEMICAL RISK HOTSPOT DETECTION FOR MAJOR CITIES IN SOUTH KOREA	1188
<i>Hangnan Yu, Woo-Kyun Lee, Jong Ryeul Sohn</i>	
ANALYSIS OF GEO-POSITIONING ACCURACY USING STEREO PAIRS OF WORDVIEW-1 AND PLEIADES-1B IMAGERY	1192
<i>Ha-Eun Baek, Won-Suk Kwon, Mi-Kyeong Kim, Young-Rim Lee, Dae-Sik Shin</i>	
COMPREHENSIVE ANALYSIS OF THE MULTI-BEAM LIDAR SELF-CALIBRATION FOR MOBILE MAPPING SYSTEM	1195
<i>Han Sae Kim, Kang Hyeok Choi, Yongil Kim</i>	
GENERATING AND CORRECTING RATIONAL POLYNOMIAL COEFFICIENTS USING IMAGE CORRECTION MODEL	1205
<i>Namhoon Kim, Hyo-Seon Jang, Mohammad Gholami Farkoushi, Yoon-Jo Choi, Hong-Gyoo Sohn</i>	
3-DIMENSIONAL GROUND COORDINATES DETERMINATION ACCURACY ANALYSIS BASED ON STEREO IMAGING ANGLE IN KOMPSAT-3A	1207
<i>Doochun Seo, Donghan Cha, Hyeji Kim</i>	
PROCESSING SPEED IMPROVEMENT ON SFM USING PANORAMIC IMAGES BASED ON CAMERA DIRECTION CONSTRAINTS	1213
<i>Yuichiro Yamaguchi, Yoshiki Sasaki, Masafumi Nakagawa</i>	
ANALYSIS OF FOREST FIRE DAMAGE AREA IN GANGWON-DO, KOREA USING HIGH-RESOLUTION AERIAL IMAGES AND NEAR-INFRARED IMAGES	1219
<i>Sung-Jin Ma</i>	
SITUATION VISUALIZATION SYSTEM OF DISASTER AREA USING TRUCK-MOUNTED CAMERA	1220
<i>Takuho Matsuo, Osamu Uchida</i>	
FEASIBILITY STUDY ON DEMOGRAPHIC ANALYSIS BASED ON SPATIAL ANALYSIS APPLYING THE G STATISTICS	1224
<i>Yuki Kameda, Kiichiro Kumagai</i>	
APPLICATION OF BOOSTED CLASSIFICATION AND REGRESSION MODELS FOR GROUNDWATER POTENTIAL MAPPING	1232
<i>Sunmin Lee, Moung-Jin Lee, Jeong-Cheol Kim</i>	
PERFORMANCE EVALUATION OF SINGLE FREQUENCY RTK-GNSS POSITIONING FOR STRUCTURE INSPECTION USING WEARABLE SENSORS	1236
<i>Kouki Kurita, Shigeki Takahashi, Masafumi Nakagawa</i>	
KOMPSAT OPEN API FOR SATELLITE INFORMATION SERVICE	1245
<i>Yoon-Jeong Jang, Gab-Ho Jeun, Dae-Won Chung</i>	
TIDE AND WAVE MEASUREMENT BASED ON HIGH PRECISION DYNAMIC GNSS TECHNOLOGY	1250
<i>Rui Shan, Xiaojun Cheng, Tengfei Zhou, Yujie Cao, Lingyu Dong</i>	
THE DEVELOPMENT OF CONSUMABLE HYPERSPECTRAL SPECTRAL IMAGER	1259
<i>Long-Jeng Lee, Yu-Chuan Lin, Victor Hao, Ming-Hsien Chou, Yuan Shen</i>	
IN-FLIGHT GEOMETRICAL CALIBRATION FOR FORMOSAT-5 PANCHROMATIC AND MULTISPECTRAL SATELLITE IMAGES	1262
<i>Li-Hsueh Chang, Tee-Ann Teo, Shih-Chia Peng, Tun-Yu Liao, Nai-Yu Chen, Cynthia Liu</i>	
GRAVITY EFFECT EVALUATION FOR TMA TELESCOPE BASED ON CMM MEASUREMENT	1266
<i>Kun-Huan Wu, Shenq-Tsong Chang, Yu-Chuan Lin, Po-Ming Lin, Yu Hsiang Lin, Chun-Chieh Lien</i>	
JPEG2000 IMAGE COMPRESSION FOR HIGH RESOLUTION REMOTE SENSING INSTRUMENTS ON SATELLITES	1275
<i>Nuan-Ya Huang, Jer Ling, Ming-Yuan Yeh, Li-Yu Chang, Albert Lin, Po-Yen Huang</i>	

EIGHT YEARS OPERATION OF COMS FOR THE OCEAN MONITORING MISSION1	1283
<i>Young-Min Cho, Hye-Won Kim, Eun-Bin Park</i>	
THE STATUS OF GEOSTATIONARY ENVIRONMENT MONITORING SPECTROMETER	1288
<i>Hyunkee Hong, Sang-Kyun Kim, Jong-Min Yoon, Won Jun Choi, Kyung-Jung Moon, Sang-Min Kim, Chang Suk Lee</i>	
NOVASAR-1 – FIRST YEAR OF OPERATION, AND NEXT STEPS	1289
<i>Victoria Irwin, Alex Da Silva Curiel</i>	
A WATERMARKING TECHNIQUE FOR HYPERSPECTRAL IMAGES USING DWT AND HESSENBERG MATRIX	1290
<i>Geeta Kasana</i>	
EXTRACTION OF ROCKS AND BOULDERS ON NATURAL TERRAIN USING SEMANTIC SEGMENTATION	1298
<i>Shenlu Jiang, Coco Yin Tung Kwok, Man Sing Wong</i>	
DETECTION OF DEFORESTATION ON PROTECTED FOREST AREAS USING MULTI-SENSOR PLATFORM AND TIME SERIES ANALYSIS – AN ENVIRONMENTAL MONITORING TOOL	1308
<i>Ivy Jean Dilig, Nash Frederic Prado</i>	
LAND COVER CLASSIFICATION ON THE KOREAN PENINSULA USING MULTI-TEMPORAL MODIS AND GOCI DATA	1317
<i>Myunghee Jung, Sang Hoon Lee</i>	
ACCURACY IMPROVEMENT AND BLENDING OF MHS, SSMIS, AND GMI RAIN RATE PRODUCT USING DNN AND EBMA	1322
<i>Kwangjin Kim, Yang-Won Lee</i>	
THE EFFECT OF THE PRINCIPAL COMPONENT ANALYSIS IN CONVOLUTIONAL NEURAL NETWORK FOR HYPERSPECTRAL IMAGE CLASSIFICATION	1326
<i>Taehong Kwak, Ahram Song, Yongil Kim</i>	
SURFACE REFLECTANCE PRODUCTS FROM THE GEOSTATIONARY ENVIRONMENTAL MONITORING SENSOR	1334
<i>Kwon-Ho Lee, Jung-Moon Yoo</i>	
APPLICATION OF GEO SATELLITE OBSERVATION DATA FOR ATMOSPHERIC CORRECTION OF LEO SATELLITE IMAGE	1339
<i>Kwon-Ho Lee, Jong-Min Yeom</i>	
MULTIMODAL MERGING OF SATELLITE IMAGERY WITH METEOROLOGICAL AND POWER PLANT DATA IN DEEP CONVOLUTIONAL NEURAL NETWORK FOR SHORT-TERM SOLAR ENERGY PREDICTION	1343
<i>Gwangjoong Kim, Hunsoo Song, Minho Kim, Yongil Kim</i>	
EVALUATING SUITABLE FLIGHT HEIGHT AND CAMERA ANGLE OF A UAV FOR IDENTIFYING NUMBER PLATES OF MOTORBIKES	1353
<i>Kento Kojima, Kazuhiro Naoki, Kohei Cho</i>	
USE OF UNMANNED AERIAL VEHICLE DATA IN NEAR-INFRARED REGION TO ESTIMATE WATER QUALITY OF MIHARU DAM RESERVOIR, JAPAN	1361
<i>Yoichi Kageyama, Shin Totsuka, Masato Ishikawa, Bunyu Kobori, Daisuke Nagamoto</i>	
COMPARISON BETWEEN GPM AND GRIDDED PRECIPITATION PRODUCT FROM INTERPOLATED RAIN GAUGE MEASUREMENTS	1370
<i>Archie Veloria, Gay Jane Perez, Giovanni Tapang, Josefino Comiso</i>	
DETAILED CHARACTERISTICS OF FOG OCCURRENCES IN SOUTH KOREA USING THE RECENT 3 YEARS OF VISIBILITY DATA	1379
<i>Tae-Ho Kang, Myeong-Seok Suh</i>	
LOW-RANK AND SPARSE MATRIX DECOMPOSITION WITH ORTHOGONAL COMPLEMENT SUBSPACE PROJECTION FOR HYPERSPECTRAL ANOMALY DETECTION	1381
<i>Xing Wu, Xia Zhang</i>	
DETERMINING THE COEFFICIENT OF CIRCULAR TEMPLATE FOR FAST SIMILARITY MEASUREMENT IN IMAGE REGISTRATION	1386
<i>Chul-Soo Ye</i>	
EFFICIENCY EVALUATION OF AR MODEL-BASED LINEAR PREDICTION FOR IMPROVEMENT OF SPATIAL-RESOLUTION OF SPOTLIGHT MODE KOMPSAT-5 IMAGE	1395
<i>Seung-Jae Lee, Sun-Gu Lee, Do-Chul Yang, Dong-Hyun Kim</i>	
DEVELOPMENT OF HYBRID FOG DETECTION ALGORITHM USING VARIOUS FOG CHARACTERISTICS	1400
<i>Ji-Hye Han, Myoung-Seok Suh, Na-Young Roh, Ha-Yeong Yu</i>	
USING GEE TO ESTIMATE SOIL MOISTURE WITH DATA AUGMENTATION AND SVR	1409
<i>Wei Xu, Qiming Qin, Zhaoxu Zhang</i>	

SELF-EVALUATION OF BAND MATCHING QUALITY IN KOMPSAT-3A DATA PROCESSING PROCEDURE	1416
<i>Jae-Heon Jung, Dae-Soon Park, Youkyung Seo</i>	
APPLYING THE ARTIFICIAL NEURAL NETWORKS AND UNMANNED AERIAL VEHICLE IMAGES TO CLASSIFY VARIOUS CROP TYPES	1420
<i>Wan-Li Sun, Shu-Ting Kuo, Chien-Erh Wang, Wan-Chen Lin, Ming-Yun Chang, Yu-Cheng Hsiao, Re-Yang Lee</i>	
LAND COVER CLASSIFICATION FOR ECONOMIC CROPS IN THAILAND USING CONVOLUTIONAL NEURAN NETWORKS	1430
<i>Tanakorn Sritarapipat, Siam Lawawirojwong, Panu Srestasathiern</i>	
DEVELOPMENT OF QUALITY INDICATOR FOR STEREOSCOPIC PLOTTING USING ORIENTATION PARAMETERS OF UAV IMAGES	1439
<i>Pyung-Chae Lim, Hae-Min Lee, Yeong-Min Cho, Jung-Il Shin, Taejung Kim, Suk Bae Lee</i>	
MULTISPECTRAL DENOISING FOR MULTI-PURPOSE SATELLITES IMAGING SENSOR USING WAVELET DOMAIN DEEP RESIDUAL LAERNING	1448
<i>Joonyoung Song, Jong Chul Ye</i>	
A REMOTE SENSING INFORMATION SYSTEM FOR MARICULTURE ENVIRONMENT PARAMETERS	1454
<i>Xufeng Xing, Shiyi Xie, Xiaohong Peng, Miaofen Huang</i>	
STUDY ON VERTICAL DISTRIBUTION MODEL OF BACKSCATTER COEFFICIENT IN PETROLEUM-POLLUTED WATER BODIES	1460
<i>Miaofen Huang, Weijian Luo, Yingen Huang, Bingcai Chen</i>	
A STUDY ON THE DEVELOPMENT OF OPEN SOURCE-BASED IMAGE MOSAICKING SOFTWARE	1470
<i>Seo-I Cheon, Gyeong-Min Kang, Kyeong-Hwan Choi</i>	
COMPARISON BETWEEN UNET, MODIFIED UNET AND DENSE-ATTENTION NETWORK (DAN) FOR BUILDING EXTRACTION FROM TRIPLESAT IMAGERY	1474
<i>Xingjue Wang, Xiaoman Huang, Chong Chen, Bin Zhou, Jianjun He, Ting Chen</i>	
DOPPLER FREQUENCY PERFORMANCE OF KOMPSAT-5 MEASURED FROM WORLDWIDE UNIFORM BACKSCATTERING COEFFICIENT AREA	1483
<i>Ho-Ryung Jeong, Dong-Hyun Kim, Do-Chul Yang, Dong-Han Lee</i>	
APPLICATION OF DEEP LEARNING ALGORITHMS CONSIDERING SPATIO-TEMPORAL FEATURES FOR CROP CLASSIFICATION	1487
<i>Min-Gyu Park, No-Wook Park</i>	
EFFECTS OF CLASS PURITY OF TRAINING DATA ON CROP CLASSIFICATION USING 2D-CNN	1493
<i>Soyeon Park, No-Wook Park</i>	
FILTERING OF BRIDGE-SLAB BENDING EFFECT IN TERRESTRIAL LASER SCANNING	1498
<i>Masafumi Nakagawa, Koichi Sasaki, Shigeo Matsuda, Hirohito Ito</i>	
REAL-TIME MAPPING OF CONSTRUCTION WORKERS USING MULTILAYERED LIDAR	1506
<i>Masafumi Nakagawa, Masayoshi Kaseda, Masakuni Taguchi</i>	
LUNAR CRATER IDENTIFICATION AND COUNTING BY DEEP LEARNING	1514
<i>Haingja Seo, Sang Min Park, Hyun Ho Lee, Hansol Jeong, Myungjin Choi</i>	
A STUDY ON PERFORMANCE IMPROVEMENT OF RESIDUAL NUC ALGORITHM BY ANALYZING SIDE-SLITHER IMAGES OF KOMPSAT-3A	1522
<i>You-Kyung Seo, Jaeheon Jeong, Daesoon Park, Doochun Seo, Donghan Lee, Hyosuk Lim</i>	
A GROUND REFERENCE TARGET DETECTION METHOD FOR AUTOMATIC VICARIOUS CALIBRATION OF UAV MULTISPECTRAL IMAGE	1526
<i>Jung-Il Shin, Yeong-Min Cho, Hae-Min Lee, Pyung-Chae Lim, Taejung Kim</i>	
COMBINATION OF 2D-CNN AND RANDOM FOREST MODELS FOR CROP CLASSIFICATION WITH UAV IMAGERY	1532
<i>Geun-Ho Kwak, Chan-Won Park, Kyung-Do Lee, Sang-Il Na, Ho-Yong Ahn, No-Wook Park</i>	
AN ANALYSIS OF THE EFFECT OF TILT ANGLE ON MTF OF KOMPSAT-3A	1537
<i>Hyun-Ho Kim, Doochun Seo, Jaeheon Jeong, Daesoon Park, Donghan Lee</i>	
AUTOMATIC COLORIZATION OF GRAYSCALE AERIAL IMAGERY USING XGBOOST REGRESSION	1540
<i>Hye Jin Kim, Yang Dam Eo, Dae Kyo Seo, Jin Sue Park, Geun Woo Paik, Wan Yong Park</i>	
EVALUATION ON STRUCTURE FROM MOTION USING BINARY ROBUST INVARIANT SCALABLE KEYPOINTS	1544
<i>Min-Lung Cheng, Masashi Matsuoka</i>	

CONFORMITY ANALYSIS ON THE USE OF HYDRO ENFORCEMENT METHOD TO PRODUCE DIGITAL TERRAIN MODEL USING THE LIDAR DATA AS INDONESIA BASIC GEOSPATIAL INFORMATION, CASE STUDY: SUMEDANG DISTRICT, WEST JAVA, INDONESIA	1549
<i>Ilham Jamaluddin, William Krista Mahendra, Desrina Putri, Muhammad Kamal</i>	
TOWARDS THE TRANSFORMATION OF DIGITAL ELEVATION MODEL (DEM) INTO ELEVATION PROFILE USING AGGREGATED TRANSECT LINE	1559
<i>Rolyn C. Daguil, Ryan O. Cuarez</i>	
EVALUATION OF ROTATION INVARIANT AND EQUIVARIANT CNN FOR CATADIOPTIC PANORAMA	1560
<i>Hyung-Woo Kim, Yang-Won Lee</i>	
SAR LAYOVER CORRECTION USING DIGITAL SURFACE MODEL	1561
<i>Chi-Chuan Lo, Fuan Tsai</i>	
DETECTION AND MAPPING OF HARMFUL ALGAL BLOOM USING GEOSTATIONARY OCEAN COLOR IMAGER(GOCI) AND MACHINE LEARNING	1562
<i>Suho Bak, Dohyun Hwang, Unuzaya Enkhjargal, Hongjoo Yoon</i>	
SOIL SURVEY IMPLEMENTATION USING RASPBERRY PI THROUGH COLORIMETRIC DETERMINATION OF NITROGEN, PHOSPHORUS, POTASSIUM, AND PH LEVEL	1563
<i>Meo Vincent Caya, Aaron Jeremiah Arcagua, Dred Roie Cleofas, Roland Neil Hornada, Alejandro H. Ballado Jr.</i>	
MULTI-SENSOR MAPPING AND ESTIMATION OF SEAGRASS ABOVEGROUND BLUE CARBON STOCKS USING LANDSAT OLI AND ETM+ ALONG MERAMBONG COASTAL WATER	1572
<i>Dalhatu Aliyu Sani, Mazlan Hashim</i>	

VOLUME 3

STATISTICAL ASSESSMENT OF THE INFLUENCE OF HYDROMETEOROLOGICAL FACTORS ON FINE DUSTS	1583
<i>Seulchan Lee, Jaehwan Jeong, Minha Choi</i>	
SOIL MOISTURE ESTIMATION BASED ON WATER CLOUD MODEL AT THE MOUNTAINOUS AREA	1593
<i>Seongkeun Cho, Jaehwan Jeong, Jongjin Baik, Minha Choi</i>	
EVALUATION OF VEGETATION INDICES (VIS) TO DETECT TWISTER DISEASE OF ONION USING SENTINEL-2 IMAGERY	1600
<i>Ronaldo Alberto, Miguelito Isip, Ariel Biagtan</i>	
MAPPING NATURAL FOREST BY LANDSAT MULTITEMPORAL IMAGE DATA - CASE STUDY IN KON TUM PROVINCE OF VIETNAM	1607
<i>Nguyen Dinh Duong</i>	
FOREST CLASSIFICATION BY TREE SPECIES WITH UAV DATA AND U-NET	1614
<i>Ei Matsui, Masahiko Nagai, Yumiko Nagai, Tsuyoshi Eguchi, Shoji Okamoto, Yoshiki Mizukami</i>	
ANALYZING THE RELATIONSHIP BETWEEN LAND COVER AND LAND SURFACE TEMPERATURE (LST) DISTRIBUTION IN THE MOUNT PAPANLAYAN AREA, WEST JAVA	1623
<i>Tin Widyaning Satriawan, Endah Sulistyawati, Agung Budi Harto</i>	
A COMBINATION METHOD BASED ON CSF AND MINIMUM WEIGHTED GRAPH CUTS TO DETERMINE LOCATION AND HEIGHT OF INDIVIDUAL TREE FROM AIRBORNE LIDAR DATA	1633
<i>Cao Yujie, Cheng Xiaojun, Shan Rui, Li Jintao, Yang Zexin, Huang Kai</i>	
EVALUATION OF MATANG MANGROVE FOREST LOSS AND GAIN IN 10 YEARS TIME USING MULTI-TEMPORAL SATELLITE DERIVED VEGETATION INDEX	1644
<i>Mohd Fairuz Fuazi, Muhamad Zulfazli Zakaria, Azlin Azmi</i>	
LISTVENITE OCCURRENCES IN THE FAULT ZONES OF NORTHERN VICTORIA LAND, ANTARCTICA: ASTER-BASED MAPPING APPROACH	1654
<i>Amin Beiranvand Pour, Yongcheol Park, Jong Kuk Hong, Aidy M Muslim, Biswajeet Pradhan</i>	
MANGROVE LEAF AREA INDEX (LAI) MAPPING USING WORLDVIEW-2 IMAGERY IN PERANCAK ESTUARY, BALI, INDONESIA	1661
<i>Aldo Restu Agi Prananda, Muhammad Kamal, Denny Wijaya Kusuma</i>	
FOREST CLEARANCE MONITORING WITH DUAL POLARIZED SAR DATA IN THE PEATLANDS OF INSULAR SOUTHEAST ASIA	1671
<i>Chenghua Shi, Soo Chin Liew</i>	

POTENTIAL OF HYPERSPECTRAL REMOTE SENSING DATA IN ASSESSING CHLOROPHYLL CONTENT OF MATURE OIL PALM WITH LINEAR DISCRIMINANT ANALYSIS CLASSIFIER	1679
<i>Amiratul Diyana Amirruddin, Farrah Melissa Muharam, Mohd Hasmadi Ismail, Mohd Firdaus Ismail, Tan Ngai Paing</i>	
IMPACT ASSESSMENT OF URBANIZATION ON AIR QUALITY IN COLOMBO, SRI LANKA	1683
<i>Lilangi Varunika Wijesinghe, Wataru Takeuchi</i>	
ESTIMATION OF GROUND SO₂ CONCENTRATION THROUGH THE SYNERGISTIC USE OF SATELLITE DATA AND NUMERICAL MODELS	1691
<i>Yoo-Jin Kang, Hyun-Young Choi, Jung-Ho Im, Eun-Na Jang, Jung-Hee Lee, Yeon-Su Lee</i>	
ESTIMATION 1 KM MODIS LAND SURFACE TEMPERATURE UNDER CLOUDY CONDITIONS FOR HUMID SUMMER DAYS	1693
<i>Cheolhee Yoo, Jungho Im, Dongjin Cho, Naoto Yokoya, Junshi Xia</i>	
CALCULATING SEDIMENT YIELD USING HEC-HMS IN PILAN AND MATIAO WATERSHED IN SOUTHERN PHILIPPINES	1694
<i>Joseph E. Acosta, Richard M. Logronio, Ace Niño B. Guieb, Gus Kali R. Oguis</i>	
AIR QUALITY ASSESSMENT OF YANGON CITY	1704
<i>Khin Mar Yee, Mu Mu Than, Kyi Lint, Mar Lar Han, Ye Lin Aung, Thu Thu Htwe</i>	
SUBSURFACE WATER LEVEL OBSERVATION OF CROPLANDS IN MYANMAR WITH KBDI	1711
<i>Kyaw Sann Oo, Wataru Takeuchi</i>	
WATER ENVIRONMENT SUITABILITY FOR MARI-CULTURE USING LANDSAT IMAGE 8 OLI/TIRS	1724
<i>Karunia Pasya K, Shafa Arum Wulandari, Shelly Yeni Saputri, Yuana Dysa Permatasari, Zulfian Isnaini Cahya, Wirastuti Widyatmanti, Muhammad Chaidir Undu</i>	
A STUDY ON THE APPLICABILITY OF REDEGE-M CAMERA FOR WATER COLOR OBSERVATION	1732
<i>Wonkook Kim, Sunghun Jung</i>	
ESTIMATING CORN (ZEA MAYS L.) LAI USING UAV-DERIVED VEGETATION INDICES	1738
<i>Jayson O. Fumera, Ronaldo B. Saludes, Moises A. Dorado, Pompe C. Sta. Cruz</i>	
MODELING INTER-ANNUAL AND SEASONAL DISTRIBUTION OF CROP DEPREDATION BY WILD ASIAN ELEPHANTS IN EASTERN THAILAND DURING 2009 TO 2017	1748
<i>Nuntikorn Kitratporn, Wataru Takeuchi</i>	
REGIONAL RICE YIELD ESTIMATION BASED ON ASSIMILATION OF REMOTE SENSING DATA AND CROP GROWTH MODEL WITH ENSEMBLE KALMAN METHOD	1757
<i>Jing Wang, Kun Yu, Bihui Lu, Miao Tian</i>	
ASSESSMENT OF AGRICULTURAL LAND-COVER CHANGE IN NUEVA ECIJA USING GEOGRAPHIC INFORMATION SYSTEM AND REMOTE SENSING TECHNOLOGIES	1766
<i>Edmark Bulaong, Eliza E. Camaso, Annie Melinda Paz Alberto, Katrina Mapanao</i>	
VERIFICATION OF COLOR INDICES OBTAINED FROM DIGITAL CAMERAS FOR ESTIMATION OF RICE GROWTH STATUSES UNDER VARIOUS CONDITIONS	1774
<i>Yukie Tanaka, Keisuke Katsura, Megumi Yamashita</i>	
ASSESSMENT OF CROPLAND USE IN THE AKKOL DISTRICT OF KAZAKHSTAN USING MODIS NDVI TIME-SERIES DATA	1781
<i>Aigul Bekbayeva, Farabi Yermekov, Sholpanvaliyeva, Jay Sagin</i>	
SINGLE CROP PHENOTYPING USING UNMANNED AERIAL SYSTEM (UAS) DATA	1789
<i>Anjin Chang, Jinha Jung, Juan Landivar</i>	
PHYSIO-CLIMATIC CLASSIFICATION OF BANGLADESH'S RICE PADDY FIELD FOR ALTERNATE WETTING AND DRYING (AWD)	1790
<i>Md Rahedul Islam, Wataru Takeuchi</i>	
APPLICATION OF MULTI-TEMPORAL RADARSAT-2 BACKSCATTERING FOR MONITORING OF PADDY-PLANTING STAGES IN MALAYSIA	1800
<i>Muhammad Nazir Siham, Noryusdiana Mohamad Yusoff, Zuraimi Suleiman, Nurul Aina Abdul Aziz</i>	
REMOTE SENSING BASED RICE CROP INSURANCES AS AN OPERATIONAL SERVICE IN INDIA USING SENTINEL 1A AND ORYZA CROP SIMULATION MODEL	1809
<i>S. Pazhanivelan, K. P. Ragnath, N. S. Sudarmanian, R. Kumaraperumal, Tri Setiyono, E. D. Quicho</i>	
SAR PROCESSING BY CHIRP SCALING ALGORITHM(CSA) BASED GENERAL ALGORITHM	1814
<i>Dong-Hyun Kim, Do Chul Yang, Ho Ryung Jung, Dong Han Lee</i>	
AUTOMATED EXTRACTION OF WATER BODIES FROM ALOS-2 IMAGES USING U-NET AND ROUGH TRAINING SET	1820
<i>Vaibhav Katiyar, Masahiko Nagai</i>	

INVESTIGATION OF UNUNIFORM SHIP PHASE OBSERVED IN HIGH-RESOLUTION TANDEM-X ATI-SAR USING ELECTROMAGNETIC SIMULATION	1826
<i>Seungchul Lee, Duk-Jin Kim, Ki-Mook Kang</i>	
A DEEP NEURAL NETWORK SLOPE REDUCTION MODEL ON SENTINEL-1 IMAGES FOR WATER MASK EXTRACTION	1833
<i>Marios Mpakratsas, Anastasia Moutzidou, Ilias Gialampoukidis, Stefanos Vrochidis, Ioannis Kompatsiaris</i>	
ASSESSMENT OF URBAN VULNERABILITY TO EARTHQUAKE HAZARD FOR TABRIZ CITY, NW IRAN USING ANP-ANN MODEL	1841
<i>Mohsen Alizadeh, Amin Beiranvand Pour, Bahareh Kalantar, Aidy M Muslim</i>	
ANALYSIS OF SPATIAL AND TEMPORAL CHARACTERISTICS OF DROUGHT AND FLOOD BASED ON PRECIPITATION TEMPERATURE INDEX AT WINTER WHEAT GROWTH STAGES	1849
<i>Miao Tian, Jing Wang</i>	
INTEGRATED APPROACH IN DETERMINING BUILDING RISK TO TSUNAMI HAZARD : A CASE STUDY OF PENANG, MALAYSIA	1855
<i>Sabrina Shahri, Zuraimi Suleiman, Shahrudin Ahmad, Nurul Nadia Abd Malek, Hana Mohamed Jamil</i>	
DELINEATING FLOOD EXTENT AND FLOOD-PRONE RICE AREAS IN THE PHILIPPINES USING SYNTHETIC APERTURE RADAR	1864
<i>Alice Laborte, Jeny Raviz, Sonia Asilo, Mary Rose Mabalay, Neale Paguirigan, Juanito Maloom, Mabel Barroga, Jesiree Elena Ann Bibar, Meriam Coñado, Eve Daphne Radam, Jovino De Dios, Eduardo Jimmy Quilang</i>	
INTEGRATION OF SENTINEL-2 SPECTRAL INFORMATION WITH HIGH SPATIAL RESOLUTION PLANETSCOPE IMAGERY FOR WILDFIRE DAMAGE ASSESSMENT	1874
<i>Minho Kim, Yongil Kim</i>	
SATELLITE-BASED DETECTION OF OIL SPILL SIGNATURE RESIDUAL USING SYNERGY MULTISPECTRAL IMAGES OF LANDSAT-8 OLI AND LANDSAT-7 ETM+	1884
<i>Jamal Jasim Abdulla Althawadi, Mazlan Hashim</i>	
FLOOD HAZARD ASSESSMENT USING FUZZY ANALYTIC HIERARCHY PROCESS: A CASE STUDY OF BANG RAKAM MODEL IN THAILAND	1891
<i>Aphitha Yodying, Kamonchat Seejata, Sasithon Chatsudarat, Polpreecha Chidburee, Nattapon Mahavik, Charatdao Kongmuang, Sarintip Tantane</i>	
PEST AND PLANT DISEASE IDENTIFICATION IN GREENHOUSE USING UAV IMAGES	1901
<i>Tzu-Ming Feng, Chao-Hung Lin</i>	
THE ROLE OF ENVIRONMENTAL AND EPIDEMIOLOGICAL IN MAPPING SUSCEPTIBILITY MALARIA DISEASE IN RANAU DISTRICT USING REMOTE SENSING AND GIS	1907
<i>Shimatun Jumani Ibrahim, Norimaniah Mazelan, Zuraimi Suleiman, Jenarun Jelip, Mohd Hafizi Abdul Hamid, Hazil Sardi Soliano, Ong Chia Ching, Ahmad Shah Ibrahim</i>	
THE USE OF SOIL MOISTURE ACTIVE PASSIVE (SMAP) DATA FOR LARGE-SCALE FIRE MANAGEMENT OVER GANG-WON PROVINCE	1917
<i>Ju-Hyoung, Lee</i>	
EFFECTS OF TOPOGRAPHIC DATASETS ON PHYSICALLY BASED LANDSLIDE MODEL AT A HYPER LOCAL SLOP	1921
<i>Azizi Dermawan, Shou-Hao Chiang</i>	
A PRELIMINARY STUDY ON UPDATING A DETECTED TRAFFIC CONE'S COORDINATES OBTAINED FROM A STEREO CAMERA ON A PSEUDO HIGH DEFINITION MAP DATABASE	1928
<i>Miguel Luis R. Lagahit, Yi-Hsing Tseng</i>	
HIGH ACCURACY DIGITAL SURFACE MODEL (DSM) GENERATION, ORTHORECTIFICATION AND MOSAICKING USING PHASE ONE AERIAL CAMERAS	1934
<i>Philip Cheng</i>	
PHOTOGRAMMETRIC 3D MODELLING POTENTIAL COMPARISON OF SFM-BASED NEW GENERATION IMAGE MATCHING SOFTWARE	1943
<i>Umut Gunes Sefercik, Feride Tanrikulu, Can Atalay</i>	
INVESTIGATION OF PALU TUNNEL DEFORMATIONS ALONG THE CREEPING SECTION (HAZAR-PALU SEGMENT) OF THE EAST ANATOLIAN FAULT, TURKEY BY TERRESTRIAL LASER SCANNER	1951
<i>Ugur Dogan, Bulent Bayram, Semih Ergintav, Alper Yigitoglu, Ziyadin Cakir, Cengiz Zabcı, Hayrullah Karabulut</i>	
A CONCRETE BRIDGE CRACK SIZE MEASUREMENT PROCEDURE BASED ON UNMANNED AERIAL VEHICLE AND IMAGE REGISTRATION	1960
<i>Hsuan-Yi Li, Chih-Yuan Huang</i>	
GRASSLAND COVERAGE AND BIOMASS ESTIMATION BASED ON MAJOR QUADRAT FROM UAV PHOTOGRAMMETRY	1969
<i>Bao Nisha, Liu Shanjun, Mao Yachun</i>	

LOW-COST UAV FOR DETERMINATION OF HORIZONTAL AND VERTICAL COORDINATES CHANGES NEAR COASTAL AREA	1979
<i>Khairul Nizam Abdul Maulud, Faiz Arif, Abdul Aziz Ab Rahman</i>	
AGE ESTIMATE FOR THE MOUNDED TOMB OF HIMIKO BY SHAPE ANALYSIS	1985
<i>Susumu Ogawa, Yukiya Taniguchi, Toshiro Harumari</i>	
EVALUATION OF GK2A AMI RADIOMETRIC PERFORMANCE AFTER THE LAUNCH	1993
<i>Kyoung-Wook Jin, Koon-Ho Yang</i>	
IMAGE SIMULATION FOR GF-5 VISUAL AND INFRARED MULTISPECTRAL SENSOR	1999
<i>Zhang Wenjuan, Shi Mengmeng, Zhang Bing, Li Yunduan, Dai Haishan</i>	
SATELLITE ATTITUDE OFFSET ESTIMATION FOR KOMPSAT-6	2006
<i>Dochul Yang, Byoung-Gyun Lim, Donghyun Kim</i>	
SITE SUITABILITY ANALYSIS OF DIVERSION DAMS IN QUEZON, PHILIPPINES USING MULTI-CRITERIA DECISION ANALYSIS AND GIS	2009
<i>Bryan M. Baltazar, Ronaldo B. Saludes, Moises A. Dorado, Pompe C. Sta. Cruz</i>	
A STUDY ON THE DEVELOPMENT OF THE URBAN WATERS FLOODING SIMULATION SYSTEM USING UNITY3D	2018
<i>Yeong-Cheol Choi, Dae-Ik Kang, Sung-Chan Oh, Kyeong-Hwan Choi</i>	
ON-ROAD PARKING IN TAIPEI CITY: SPATIAL ANALYSIS OF POLICY IMPACT	2022
<i>Meng-Chin Tsai, Stephan Van Gasselt, Tzu-Chin Lin</i>	
INTEGRATION OF GIS, GPS AND CCTV INTO A TRACKING APP SYSTEM: DEVELOPING A SEARCH TOOL FOR MISSING SENIORS WITH DEMENTIA	2031
<i>Pei-Fen Kuo, Chui-Sheng Chiu</i>	
AN APPLICATION OF HEC-RAS MODEL AND GEOGRAPHIC INFORMATION SYSTEM ON FLOOD MAPS ANALYSIS: CASE STUDY OF UPPER YOM RIVER	2036
<i>Sutthipat Wannapoch, Sarintip Tantanee, Sombat Chuenchooklin, Kamonchat Seejata, Weerayuth Pratoomchai</i>	
HARNESSING THE POTENTIAL OF MOBILE DEVICES AS FIELD DATA COLLECTION TOOL IN A SATELLITE-BASED RICE MONITORING SYSTEM	2046
<i>Arnel B. Rala, Tri Setiyono, Gene Romuga, Emma Quicho, Cornelia Garcia, Aileen Maunahan, Emmali Manalo</i>	
ON THE CONSISTENCY OF GIPSY-X AND GIPSY-OASIS WITH SAMPLES	2056
<i>Ding-Jyun Wang, Peter T. Y. Shih</i>	
EFFECT OF CLIMATE CHANGE ON SITE SUITABILITY AND RELIABILITY OF SMALL FARM RESERVOIR IN ORIENTAL MINDORO, PHILIPPINES	2057
<i>Kobe Conrad R. Abellera, Ronaldo B. Saludes, Michel G. Acosta, Roger A. Luyun Jr., Rossana Marie C. Amongo</i>	
EXPLORING THE TOPOGRAPHIC CHARACTERISTICS OF SETTLEMENT TOPONYMS IN TAIWAN	2067
<i>Jinn-Guey Lay, Cheng-Ru Chen, Chia-Jung Wu, Wei-Chia Huang, Ray Y. Chuang</i>	
IDENTIFICATION OF ROAD ACCIDENT RECURRENCE IN SRI RACHA DISTRICT, CHON BURI PROVINCE	2076
<i>Narong Pleerux, Attawut Nardkulpat</i>	
USE OF OPEN DATA KIT AND ANDROID DEVICES FOR FAST AND EASY DATA COLLECTION - A CASE STUDY FROM THE PHILIPPINES	2083
<i>Ubo Pakes, Rhea Subong, Mary Ann Gumban, Klaus Schmitt, Mari Trix Estomata</i>	
DYNAMIC INDOOR SPACE RECONSTRUCTION USING TEMPORAL POINT CLOUDS	2088
<i>Riku Nozaki, Masafumi Nakagawa</i>	
A MODIFIED DRASTIC MODEL IN GIS FOR ASSESSING GROUNDWATER VULNERABILITY TO NITRATE CONTAMINATION IN MALOLOS CITY, BULACAN, PHILIPPINES	2094
<i>Pauline Jasper D. Caracas, Ana Kathrin Dc. Tolentino, Edgardo G. Macatulad</i>	
DEVELOPMENT OF INTEGRATION VEHICLE SENSING DATA PLATFORM FOR COLLECTION AND ANALYSIS OF ROAD DRIVING ENVIRONMENT BIG DATA	2095
<i>Hong-Ki Sung, Kyu-Soo Chong</i>	
INVESTIGATION OF FF CHARACTERISTICS OF SPATIO-TEMPORAL DISTRIBUTION IN NK	2099
<i>Chengde Piao, Wensi Wang, Ri Jin</i>	
CONVERSION BETWEEN NATURAL WETLANDS AND FARMLAND IN THE TUMEN RIVER BASIN: A MULTISCALE GEOSPATIAL ANALYSIS	2108
<i>Yuyan Liu, Hua Cui, Ri Jin</i>	
INUNDATION EXTENT MAPPING USING DUAL-POLARIMETRIC SENTINEL-1 SAR DATA	2114
<i>Woohyun Jeon, Jonghyuk Yi, Youseung Kim</i>	
SPECTRAL SIMULATION ON REMOTE SENSING REFLECTANCE OF MIXED WATER WITH PETROLEUM AND SANDS USING HYDROLIGHT	2117
<i>Weijian Luo, Miaofen Huang, Junjie Yang, Bingcai Chen, Yang Zhuang</i>	

DEFORMATION MONITORING AND ANALYSIS OF CIVIL ENGINEERING STRUCTURES USING INSAR AND GIS	2127
<i>Hao Chang, Hsin Ta Liu, Fuan Tsai</i>	
THE PHILIPPINE EARTH DATA RESOURCE AND OBSERVATION CENTER – AN ENABLER IN DISASTER RISK REDUCTION AND MANAGEMENT	2135
<i>Nash Frederic M. Prado, Julius M. Judan, Lianne Maxine A. Tabanggay, Rocell Nino B. Vicente, Harold Bryan S. Paler, Alvin E. Retamar</i>	
MACHINE LEARNING APPROACHES FOR CROP YIELD PREDICTION WITH MODIS AND WEATHER DATA	2145
<i>Sungha Ju, Hyoungjoon Lim, Joon Heo</i>	
SPECTRAL BAND ADJUSTMENT FACTOR OF KOMPSAT SERIES FOR AGRICULTURE REMOTE SENSING	2149
<i>Ho-Yong Ahn, Chan-Won Park, Kyu-Ho So, Sang-Il Na, Kyung-Do Lee</i>	
RICE YIELD MODELING IN CHINA USING CLIMATE DATA WITH DEEP NEURAL NETWORK	2157
<i>S. B. Cho, Y. W. Lee</i>	
ACCURACY AND APPLICABILITY OF IMAGE REGISTRATION METHODS FOR CHANGE DETECTION IN RESTRICTED ACCESS AREAS	2160
<i>Jae-Jun Han, Sang Wook Park, Nam Kyung Kim, Young Wook Lee</i>	
MONITORING THE CHANGE ON WATER RESOURCES IN MA RIVER BASINS, VIETNAM USING THE MULTI-TEMPORAL LANDSAT SATELLITE IMAGES	2168
<i>Yun-Jae Choung, Soo-Young Choi, Nguyen Quoc Hiep, Nguyen Anh Hung</i>	
ESTIMATION OF URBAN SPRAWL AND VEGETATION LOSS OF METRO CEBU THROUGH MULTI-TEMPORAL IMAGE ANALYSIS	2172
<i>Chito Patiño, Florencio Campomanes V, Mary Joyce Flores</i>	
REMOTELY SENSED URBAN COMPACTNESS INDEX OF ULAANBAATAR (MONGOLIA) AND TONG LIAO (INNER MONGOLIA, CHINA)	2182
<i>Myagmartseren Purevtseren, Dabuxile Gungarjav, Myagmarjav Indra, Enkhtuya Nergui</i>	
OBJECT-BASED WILDFIRE DAMAGE ASSESSMENT USING PLANETSCOPE IMAGES	2192
<i>Minkyung Chung, Yongil Kim</i>	
PERFORMANCE ANALYSIS OF SHIP DETECTION ALGORITHMS BASED ON KOMPSAT-5 SLC IMAGE AND AIS DATA	2201
<i>Donghan Kim, Yoon-Kyung Lee, Sang-Wan Kim</i>	
OBSERVING PADDY PHENOLOGY WITH UAV IMAGERY	2208
<i>Jong-Geol Park</i>	
ESTIMATION OF BIOMASS BURNING ACTIVITIES OVER EAST ASIA FROM SATELLITE OBSERVATION RECORDS	2212
<i>Kwon-Ho Lee</i>	
PERFORMANCE EVALUATION ACCORDING TO VIRTUAL GRID SIZE IN THE RATIONAL FUNCTION MODEL GENERATION FOR KOMPSAT-5 SAR IMAGERY	2216
<i>Yoonjo Choi, Seunghwan Hong, Ilsuk Park, Mohammad Gholami Farkoushi, Hong-Gyoo Sohn</i>	
A PRELIMINARY STUDY OF INSAR TECHNIQUES FOR THE IMPACT OF 2016 TAITUNG EARTHQUAKE	2219
<i>Che-Wei Li, Tee-Ann Teo</i>	
TIDAL CREEK EXTRACTION FROM AIRBORNE LIDAR DATA USING GROUND FILTERING TECHNIQUES	2226
<i>Hyejin Kim, Jaebin Lee, Gwangjae Wie, Yongil Kim</i>	
DEVELOPMENT AND APPLICATION OF SATELLITE-BASED AGRO-METEOROLOGICAL DROUGHT INDEX (SAMDI)	2231
<i>Ye-Seul Yun, Yang-Won Lee</i>	
ICE VELOCITY ESTIMATION OF NARSSAP SERMIA IN GREENLAND USING MULTI-TEMPORAL X-BAND SAR OBSERVATIONS	2237
<i>Seong-Woo Jung, Seo-Woo Park, Sang-Hoon Hong</i>	
MAPPING OF THE ALTITUDINAL AND TOPOGRAPHICAL PATTERNS OF MOUNTAINOUS VEGETATION IN NORTHEAST JAPAN	2242
<i>Ram C. Sharma, Hidetake Hirayama, Mizuki Tomita, Keitarou Hara</i>	
ESTIMATION OF LOCAL-SCALE SOIL MOISTURE BY THE INTEGRATION OF SENTINEL-1 SAR AND SENTINEL-2 MSI IMAGES WITH DEEP NEURAL NETWORK	2251
<i>Soo-Jin Lee, Yang-Won Lee</i>	

PROJECTION OF PIXEL-BASED RICE YIELDS BY LINKING GEOSTATIONARY SATELLITE IMAGERY AND A CROP MODEL IN NORTHEAST ASIA	2255
<i>Seungtaek Jeong, Jonghan Ko, Jong-Min Yeom</i>	
ARCTIC SEA ICE CLASSIFICATION USING ARTIFICIAL INTELLIGENCE AND NASA TEAM 2 ALGORITHM	2262
<i>Ji-Won Kim, Yang-Won Lee</i>	
ANALYSIS OF LONG-TERM VARIATION OF OBSERVED OMI TROPOSPHERIC NO2 CONCENTRATION USING CUMULATIVE PERCENTAGE AND AVERAGING	2267
<i>Gyo-Hwang Choo, Jongmin Yoon, Won-Jin Lee, Jeonghyeon Seo, Deok-Rae Kim, Dong-Won Lee</i>	
SEMANTIC SEGMENTATION OF LANDSAT IMAGES FOR DETECTION OF WILDFIRE-DAMAGED AREAS.....	2271
<i>Seong-Wook Park, Yang-Won Lee</i>	
IMPACTS OF CLIMATE CHANGE ON RICE PRODUCTION IN SIEM REAP, CAMBODIA.....	2274
<i>Daophone Phetkhampheng, Jonghan Ko</i>	
DEVELOPMENT OF A SIMPLE RADIOMETRIC CALIBRATION SYSTEM FOR MULTISPECTRAL IMAGES OF AN UNMANNED AERIAL VEHICLE	2279
<i>Taehwan Shin, Seungtaek Jeong, Jonghan Ko</i>	
ANALYSIS OF SPATIAL PATTERN OF OAK WILT OUTBREAK USING UAV IMAGES.....	2286
<i>Won-Woo Seo, Hwa-Seon Lee, Yongwoo Nam, Kyu-Sung Lee</i>	
RPC BASED BLOCK ADJUSTMENT USING KOMPSAT STEREO IMAGES.....	2295
<i>Gwangsoo Shin, Doochun Seo</i>	
IDENTIFICATION OF RIPARIAN ZONE ENCROACHMENT USING REMOTE SENSING AND GIS TECHNIQUES.....	2301
<i>Mary Grace A. Loberiano, Roxanne I. Mabunga, Edgardo G. Macatulad</i>	
ESTIMATION OF GROUNDWATER LEVEL IN THE HUNSHANDAKE SANDY LAND, CHINA BASED ON KBDI AND IN SITU MEASUREMENTS	2310
<i>Yaru Muschin, Wataru Takeuchi, Hasi Bagan, Hasi Eerdun</i>	
ANALYSIS ON VARIATION CHARACTERISTICS OF REMOTE SENSING REFLECTANCE AND ITS INFLUENCING FACTORS IN OIL-POLLUTED WATER	2316
<i>Miaofen Huang, Yang Liu, Xufeng Xing, Nannan Zhang, Zhonglin Wang</i>	
ESTIMATION OF GROSS PRIMARY PRODUCTION USING NUMERICAL WEATHER PREDICTION DATA WITH DEEP NEURAL NETWORK: CASE STUDY OF THE KOREAN PENINSULA	2324
<i>Nari Kim, Yang-Won Lee</i>	
A NEURAL NETWORK-BASED LAND USE REGRESSION MODEL TO ESTIMATE SPATIAL-TEMPORAL VARIABILITY OF SO2.....	2329
<i>Ya-Ping Hsiao, Chih-Da Wu, Jen-Wei Huang, Tee-Annteo, Shih-Yuan Lin</i>	
ESTIMATE BTEX CONCENTRATIONS VARIATIONS IN A PETROCHEMICAL PARKS AREA USING A GEOGRAPHICALLY AND TEMPORALLY WEIGHTED REGRESSION MODEL	2334
<i>Jhao-Yi Wu, Chih-Da Wu, Yu-Cheng Chen, Chin-Yu Hsu, Mu-Jean Chen</i>	
COMPARISON OF GEOSPATIAL-TEMPORAL MODELING APPROACHES IN AIR POLLUTION ESTIMATIONS	2342
<i>Yu-Ting Zeng, Chih-Da Wu, Yu-Cheng Chen, Chin-Yu Hsu, Mu-Jean Chen</i>	
SPECTRAL AND SPATIAL DISTRIBUTION CHARACTERISTICS OF SPECIFIC ABSORPTION COEFFICIENT OF PETROLEUM-POLLUTED WATER.....	2351
<i>Miaofen Huang, Yang Liu, Xufeng Xing, Weijian Luo, Junjie Yang</i>	
REMOTE SENSING-BASED DROUGHT MONITORING TO DETECT FLACH DROUGHT USING THE EVAPORATIVE STRESS INDEX IN EAST ASIA	2359
<i>Won-Ho Nam</i>	
A METHOD TO MAP AGRICULTURAL LAND ABANDONMENT USING HIGH SPATIAL AND TEMPORAL RESOLUTION IMAGES	2367
<i>Yoshihiko Kobayashi, Tsuguki Kinoshita</i>	

VOLUME 4

CLOUD-TYPE ANALYSIS OF HIMAWARI-8 METEOROLOGICAL SATELLITE DATA WITH ANCILLARY DATA FROM GROUND-BASED INSTRUMENTS.....	2377
<i>Takashi Kadowaki, Nofel Lagrosas, Hiroaki Kuze</i>	

A STUDY ON THE DEVELOPMENT OF URBAN INTERNAL WATERS FLOODING VISUALIZATION SYSTEM USING UNREAL ENGINE	2383
<i>Yu-Yeon Lee, Yeong-Cheol Choi, Yun-Jae Choung</i>	
BUILDING AREA DETECTION USING POINT CLOUDS PRODUCED BY DENSE IMAGE MATCHING METHOD	2387
<i>Mi-Kyeong Kim, Won-Suk Kwon, Wan-Yong Park, Dae-Sik Shin</i>	
AN EXPLORATORY STUDY ON THE DEVELOPMENT OF TECHNIQUE FOR IMAGE SEGMENTATION USING MOSAIC IMAGES	2391
<i>Jiyoon Moon, Kwang Jae Lee</i>	
A TEMPORAL/SPATIAL ANALYSIS OF REGIONAL/LOCAL NUMERICAL WEATHER PREDICTION MODELS FOR INFRARED SATELLITE IMAGE APPLICATIONS ON THE EARTH SURFACE	2397
<i>Hongtak Lee, Hee-Seob Kim</i>	
MAPPING OF GREEN INFRASTRUCTURE IN SAKURA CITY, CENTRAL JAPAN FOCUSING ON LOCAL CLIMATE MITIGATION	2401
<i>Yuuki Nakano, Keitarou Hara</i>	
MULTI-SENSOR INTEGRATED APPLICATION PLATFORM FOR RESOURCE SATELLITE IMAGES	2408
<i>Hsin-Yin Lin, Shu-Min Hsu, Yu-Heng Tai, Fuan Tsai, Li-Hsueh Chang</i>	
ANALYSIS ON THE KEY TECHNIQUES OF CONSTRUCTING VIRTUAL SATELLITE CONSTELLATION	2415
<i>Xufeng Xing, Shiyi-Xie, Miaofen Huang, Weijian Luo, Junjie Yang</i>	
VERTICAL VARIATION CHARACTERISTICS OF PETROLEUM CONCENTRATION AND BACKSCATTER COEFFICIENT IN PETROLEUMPOLLUTED WATER BODY	2423
<i>Xufeng Xing, Miaofen Huang, Weijian Luo, Junjie Yang, Zhonglin Wang</i>	
THE TOPOGRAPHIC IMPACT OF TYPHOON DISTURBANCES ON VEGETATION DAMAGE	2431
<i>Cheng-En Song, Su-Fen Wang, Yi-Chin Chen</i>	
ANALYSIS OF LOCAL VELOCITY ANOMALIES OF DAVID GLACIER, EAST ANTARCTICA, BY USING DOUBLE-DIFFERENTIAL INSAR	2438
<i>Heejeong Seo, Hoonyol Lee</i>	
ANALYSIS OF OPEN-PIT MINING ACTIVITIES USING SENTINEL-1A/B COHERENCE IMAGERY	2446
<i>Jihyun Moon, Hoonyol Lee</i>	
CHANGE DETECTION IN FORMOSA SATELLITE IMAGES VIA USING KULLBACK- LEIBLER DIVERGENCE	2454
<i>Li-Fen Huang, Yu-Lin Tsai, Shiau-Jing Liu</i>	
PLANTING COLD SEASON CROPS IN WARM CLIMATE SETTING VIA TEMPERATURE- CONTROLLED GREENHOUSE WITH AUTOMATED IRRIGATION, AND SOLID ACIDITY REGULATION	2461
<i>Alejandro H. Ballado, Jr., Ramon G. Garcia, Kris Eriko E. Dela Cruz, Marianne Joy M. Dela Cruz, Lyle Christian B. Parungao, John Carlo S. Sonza, Sarah Alma P. Bentir</i>	
HOW EARTH OBSERVATION SATELLITE IMAGES CONTRIBUTED TO NATURAL DISASTER MANagements WORLDWIDE	2471
<i>Hyun-Ok Kim, Yeji Kim, Hyo-Suk Lim</i>	
MULTI-TEMPORAL INTERFEROMETRY FOR DETECTING AND MONITORING LANDSLIDE: MOUNT KINABALU EARTHQUAKE CASE.	2472
<i>Husniyah Binti Mahmud, Masahiko Nagai</i>	
DEVELOPMENT OF AN INFRARED THERMOGRAPHY FOR WIND TURBINES MONITORING BY REMOTE SENSING TECHNIQUES	2478
<i>Yu-Chuan Lin, Long-Jeng Lee, Po-Ming Lin, Chih-Hao Lin, Ming-Fu Chen</i>	
SIMULATED RADIANCE AT SENSOR USING RADIATIVE TRANSFER MODEL WITH SENSOR RESPONSE FUNCTION IN MWIR AND VALIDATION OF SIMULATED RADIANCE AGAINST MODIS DATA	2481
<i>Donghwan Cha, Daeyoung Ahn, Doochun Seo</i>	
ANALYSIS OF EFFECT OF RADIOMETRIC RESOLUTION ON RADIOMETRIC AND PHENOLOGICAL NORMALIZATION	2484
<i>Daekyo Seo, Yangdam Eo, Jinsoo Park</i>	
EAST AFRICAN DROUGHT MONITORING DURING RAINY SEASONS	2488
<i>Seonyoung Park, Daehyun Kang, Cheolhee Yoo, Jungho Im, Myong-In Lee</i>	

POSSIBILITY STUDY OF VOLCANIC SO₂ EMISSION MONITORING WITH GEOSTATIONARY ENVIRONMENT MONITORING SPECTROMETER (GEMS)	2491
<i>Won-Jin Lee, Gyo-Hwang Choo, Dong-Won Lee, Seung-Yeon Kim, Hae-Jung Lee, Ara Cho, Kyunghwa Lee, Jeonghyeon Seo, Sangkyun Kim</i>	
COHERENCE ESTIMATION OF WIDELY DEMANDED AW3D30 AND SRTM 1-ARCSECOND SPACE-BORNE GLOBAL DEMS	2493
<i>Umut Gunes Sefercik, Umit Gokmen, Can Atalay</i>	
SEPARATION OF LANDSLIDE SOURCE AND RUN-OUT AREAS WITH MACHINE LEARNING FOR LANDSLIDE INVENTORY REFINEMENT	2502
<i>Jhe-Syuan Lai</i>	
AUTOMATED EXTRACTION OF FLOOD FOR LARGE SCALE AREA USING WEIGHT AVERAGE OTSU'S METHOD FROM ALOS-2 DUAL POLARISATION AND MODIS	2505
<i>Husniyah Binti Mahmud, Masahiko Nagai</i>	
INVESTIGATION OF FOREST FIRE CHARACTERISTICS IN TRANSBOUNDARY AREA USING REMOTE SENSING DATA	2515
<i>Yao Yu, Chengde Piao, Ri Jin</i>	
A METHOD FOR AUTOMATIC WATER BODY DETECTION AND ESTIMATION THE WATER LEVELS IN SMALL RESERVOIRS FROM SAR IMAGES	2524
<i>Yoon-Kyung Lee, Boram Lee, Sang-Wan Kim</i>	
OPERATIONAL REMOTE SENSING-BASED RICE MONITORING SYSTEMS IN SOUTH AND SOUTHEAST ASIA UNDER THE RIICE AND PRISM INITIATIVES	2525
<i>Alice Laborte, Tri Setiyono, Jeny Raviz, Emma Quicho, Aileen Maunahan, Eduardo Jimmy Quilang, Mary Rose Mabalay, Sellaperumal Pazhanivelan, Nguyen Hong Ninh, Men Sothy, Chharom Chin, Massimo Barbieri, Francesco Collivignarelli, Luca Gatti, Francesco Holec</i>	
ESTIMATION OF RELATIVE HUMIDITY OVER EAST ASIA WITH DEEP NEURAL NETWORKS	2527
<i>Junghee Lee, Haemi Park, Cheolhee Yoo, Seongmun Sim, Jungho Im</i>	
ANALYSIS OF RICE PADDY REDUCTION THROUGH REMOTE SENSING AND POLICY IMPLICATIONS	2528
<i>Soojeong Myeong</i>	
EVALUATION OF R-BASED WILDFIRE CLASSIFICATION ALGORITHM USING KOMPSAT-3A	2529
<i>Seung-Min Lee, Jong-Chul Jeong</i>	
ESTIMATING FOREST AREA AND ANALYSING ITS AMOUNT OF CO₂ UPTAKE USING SPATIO-TEMPORAL DATA	2530
<i>Mina Hong, Sugyeong Park, Hangnan Yu, Halim Lee, Youngjin Ko, Woo-Kyun Lee</i>	
DETECTION AND CLASSIFICATION OF FOREST AREA AND FOREST TYPE USING MULTI-TEMPORAL SATELLITE IMAGERY: FOCUSING ON GANGWON-PROVINCE IN SOUTH AND NORTH KOREA	2531
<i>Sujung Lee, Eunbeen Park, Seungeun Cha, Chul-Hee Lim, Cholho Song, Woo-Kyun Lee</i>	
THE RELATIONSHIP OF SAND AND DUST STORM AND LAND CHARACTERISTICS IN MID-LATITUDE REGION	2533
<i>Eunbeen Park, Jiwon Kim, Cholho Song, Hyun-Woo Jo, Woo-Kyun Lee</i>	
DETECTING POTENTIAL VEGETATION ESTABLISHMENT AREA USING REMOTE SENSED DATA IN THE ARAL SEA	2534
<i>Jiwon Kim, Cholho Song, Sujong Lee, Sungeun Cha, Hyun-Woo Jo, Eunbeen Park, Jiae An, Yowhan Son, Asia Khamzina, Woo-Kyun Lee</i>	
ANALYSIS OF FOREST WATERSHED IMPACT BY CLIMATE CHANGE IN KANGWON PROVINCE	2535
<i>Youngjin Ko, Halim Lee, Hyun-Woo Jo, Chul-Hee Lim, Cholho Song, Mina Hong, Woo-Kyun Lee</i>	
ANALYSIS OF FOREST FIRE CHANGE USING MULTI-TEMPORAL SENTINEL2 IMAGES AND LAND-COVER	2536
<i>Hyoung-Jin Youn, Jong-Chul Jeong</i>	
YIELD PREDICTION OF ONION (ALLIUM CEPA L.) USING HYPERSPECTRAL IMAGERY AND CLIMATIC FACTORS	2537
<i>Ye-Seong Kang, Sae-Rom Jun, Si-Hyeong Jang, Hye-Young Song, Jun-Woo Park, Chan-Seok Ryu</i>	
CAPACITY BUILDING IN SATELLITE TECHNOLOGIES AND EARTH OBSERVATION DATA UTILIZATION. KNOW-HOW TRANSFER PROGRAMMES FOR SUSTAINABLE DEVELOPMENT	2538
<i>Kasia Clatworthy, Victoria Irwin, Sir Martin Sweating</i>	
FROM 400M TO 0.3M: JOURNEY FOR INNOVATION IN SATREC INITIATIVE	2539
<i>Eugene D. Kim, Sally Seo, Ee-Eul Kim</i>	

JAXA SPACE TECHNOLOGY OF ALOS SERIES AND INITIATIVES FOR SUSTAINABLE DEVELOPMENT IN THE ASIA AND THE PACIFIC	2540
<i>Shinichi Sobue, Kei Oyoshi, Kohei Kawamura, Tatsuyuki Sagawa</i>	
A TIME-SERIES OF LAND SUBSIDENCE IN BUSAN, KOREA WITH ALOS PALSAR MULTI-TEMPORAL OBSERVATIONS.....	2541
<i>Seo-Woo Park, Seong-Woo Jung, Sang-Hoon Hong</i>	
DAMAGE ASSESSMENT USING ALOS-2/PALSAR-2 FOR THE 2018 EARTHQUAKE IN PALU, SULAWESI, INDONESIA.....	2546
<i>Nopphawan Tamkuan, Masahiko Nagai</i>	
MAPPING AND DETECTING CHANGES OF MANGROVE OVER CHINA FROM 1996 TO 2018 WITH JERS-1, PALSAR AND PALSAR-2	2554
<i>Yuhan Zheng, Wataru Takeuchi</i>	
ITERATIVE MULTISTAGE MODEL-BASED DECOMPOSITION FOR POLARIMETRIC SYNTHETIC APERTURE RADAR IMAGERY	2563
<i>Ken Yoong Lee, Chen Guang Hou, Soo Chin Liew, Leong Keong Kwoh</i>	
EVALUATION OF AMSR2 THIN ICE AREA EXTRACTION ALGORITHM APPLIED TO THE SEA ICE ZONES OF THE NORTHERN HEMISPHERE	2573
<i>Kohei Cho, Kazuhiro Naoki</i>	
2018-2019 OBSERVATIONS BY GLOBAL CHANGE OBSERVATION MISSION- CLIMATE (GCOM-C)	2583
<i>Hiroshi Murakami, Masahiro Hori, Tatsuyuki Sagawa</i>	
ESTIMATION OF FOREST ABOVE-GROUND BIOMASS USING RANDOM FOREST ALGORITHM BASED ON ALOS PALSAR AND LANDSAT 5TM IMAGERIES.....	2584
<i>Chathumal M. W. Arachchige, S. Nashrullah, Kavinda Gunasekara, Manzul K. Hazarika</i>	
BRICK KILN DETECTION IN NORTH INDIA WITH SENTINEL IMAGERY USING DEEP LEARNING OF SMALL DATASETS	2594
<i>Prakhar Misra, Wataru Takeuchi, Ryoichi Imasu</i>	
SPATIAL MAPPING OF AGRICULTURAL GREEN HOUSE GAS EMISSION FOR IMPLEMENTING PARIS AGREEMENT ON CLIMATE CHANGE IN VIETNAM	2602
<i>Thao Thanh Tong, Hang Thi Thanh Doan, Man Minh Duc Le, Duyen My Chau Nguyen, Long Ta Bui</i>	
GEOLOGICAL MAPPING IN MOROZUMI RANGE AND HELLIWELL HILLS AREAS, NORTHERN VICTORIA LAND (NVL), ANTARCTICA USING REMOTE SENSING IMAGERY	2612
<i>Amin Beiranvand Pour, Yongcheol Park, Jong Kuk Hong, Aidy M Muslim, Biswajeet Pradhan</i>	
OBJECT-BASED LAND USE/LAND COVER CHANGE DETECTION USING SPATIO - TEMPORAL IMAGES - A CASE STUDY IN METROPOLITAN CITY OF ISTANBUL, TURKEY	2618
<i>Taskin Kavzoglu, Elif Ozlem Yilmaz, Hasan Tonbul</i>	
GEOPHYSICAL CHANGES DETECTION BY REMOTE SENSING IN ALAMINOS RIVER PANGASINAN, PHILIPPINES	2625
<i>Annie Melinda Paz-Alberto, Edmark P. Bulaong, Ranilo B. Lao, Eleazar V. Raneses</i>	
CARTOMETRIC MAPPING METHODS OF VILLAGE BOUNDARY IN TEGINENENG SUB-DISTRICT, PASAWARAN REGENCY, LAMPUNG PROVINCE, INDONESIA.....	2632
<i>Theresia Retno Wulan, Yosef Prihanto, Taufik Hidayatullah</i>	
ESTIMATED LOCATION OF YAMATAL COUNTRY WITH REMOTE SENSING	2642
<i>Haruhiro Shiraish, Susumu Ogawa, Yukiya Taniguchi</i>	
UTILIZATION OF SENTINEL SATELLITE FOR VERTICAL DEFORMATION MONITORING IN SEMANGKO FAULT-INDONESIA	2643
<i>Atriyon Julzarika, Harintaka</i>	
LAND USE DYNAMICS AND LANDSCAPE CHANGE PATTERN ON THE PATCH DRY AFROMONTANE FOREST HYDROLOGY OF NORTHERN ETHIOPIA	2650
<i>Belay Manjur, Sungeun Cha, Woo-Kyun Lee</i>	
FRAMEWORK DESIGN OF INFORMATION MANAGEMENT AND SUPERVISION PLATFORM ON SOIL AND WATER CONSERVATION	2660
<i>Tao Sun, Hui Li, Yu Zhao, Chang Jun Liu, Zhe Dong, Xia Zhang</i>	
EVALUATING THE ACCURACY OF SATELLITE DERIVED BATHYMETRY	2666
<i>Ratna Sari Dewi, Prayudha Hartanto, Yustisi Lumban-Gaol, Aldino Rizaldy, Ayu Nur Syafii, Nadya Oktaviani, Intan Pujawati, Nursugi, Ati Rahadiati, Sandi Aditya</i>	
IMPLEMENTATION OF INTEGRATED GEOSPATIAL PLATFORM, DATABASE, AND APPLICATIONS FOR DISASTER RISK MANAGEMENT IN UTTARAKHAND.....	2676
<i>Ashok Dahal, Praticchya Sharma, Dr. Manzul Kumar Hazarika</i>	
FUTURE BENEFITS OF MICRO SATELLITE CONSTELLATION IMAGES FOR RAILWAY	2686
<i>Claire Nicodeme</i>	

INTRODUCING: A LAYMAN'S INTERPRETATION GUIDE TO SYNTHETIC APERTURE RADAR (SAR) DATA	2695
<i>Ake Rosenqvist</i>	
DEMONSTRATING AN OPERATIONAL WORKFLOW FOR CRISIS MAPPING BASED ON SATELLITE IMAGERY	2697
<i>Arnd Berns, Alexander Klaus</i>	
APPLICATIONS OF REMOTE SENSING INDICES FOR PROPERTY PRICE ESTIMATION	2707
<i>Sihao Ge, Shih-Yuan Lin</i>	
MAPPING OF THE POTENTIAL SITES FOR ELECTRIC FERRY OPERATION USING GEOGRAPHIC INFORMATION SYSTEM (GIS) FOR GREEN INTER-ISLAND TRANSPORT	2712
<i>Eleonor V. Palconit, Michael Lochinvar S. Abundo</i>	
AN INTEGRATED GEOINFORMATICS TECHNOLOGY WITH HYDROLOGICAL MODEL TO IMPACT ASSESSMENT OF LAND USE CHANGE ON RUNOFF IN THE UPPER LAM TA KHONG WATERSHED	2720
<i>Tharapong Phetprayoon</i>	
DRAINAGE CANAL MAP DETECTION OF TROPICAL PEATLANDS OVER INDONESIA BY PALSAR-2 IMAGE	2727
<i>Daiki Shimizu, Wataru Takeuchi, Haemi Park</i>	
A STUDY ON THE IMPORTANCE-BASED CALCULATION OF RIVER FACILITY MAINTENANCE CYCLE	2732
<i>Eung-Joon Lee, Seung-Wook Choi, Jang-Bae Lee, Hyeoung-Wook Choi</i>	
EVALUATION OF SEBAL AND METRIC BASED EVAPOTRANSPIRATION IN ARID REGION OF SAMAIL, OMAN	2736
<i>Ahsan Ali, Yaseen Al-Mulla</i>	
SYSTEMATIC ASSESSMENT OF WATERSHED GEOMORPHOLOGY USING DIGITAL TERRAIN ANALYSIS FOR DETECTING GULLIES, RIPARIAN AREAS AND UPLAND DEPRESSIONS	2743
<i>Joseph E. Acosta, Ace Niño B. Guieb, Gus Kali R. Oguis</i>	
FEATURE EXTRACTION AND ANALYSIS OF RIVER CHANGE DETECTION BASED ON REMOTE SENSING IMAGES	2753
<i>Yu-Chan Lee, Fang-Shii Ning, Hao-Che Ho</i>	
ARSENIC CONTAMINATION IN GROUNDWATER IN KYONPYAW AREA, AYEYARWADY REGION	2762
<i>Mu Mu Than, Khin Mar Yee, Kyi Lint, May Myat Thu, Malar Han</i>	
ASSESSMENT OF RIVER DIVERSION ON WATER ADEQUACY USING GOOGLE EARTH ENGINE - A TSANGPO BRAHMAPUTRA RIVER CASE STUDY	2777
<i>Guneet Mutreja, Abhra Singh, Shailesh Deshpande</i>	
A METHOD FOR CONSTRUCTING RESERVOIR AREA-STORAGE-ELEVATION CURVE USING SENTINEL-1 RADAR REMOTE SENSING IMAGE	2787
<i>Nguyen Quoc Hiep, Nguyen Anh Hung, Do Hoai Nam, Hyeoung-Wook Choi, Gi-Ho Kim</i>	
LAND USE MAPPING AND MONITORING IN LAMCHIENGKRAI WATERSHED USING REMOTE SENSING DATA, NAKHON RATCHASIMA, THAILAND	2797
<i>Intareeya Sutthivanich, Sasikarn Plaiklang, Udomvit Maneewan, Suriporn Charungthanakij, Songporn Pramarn</i>	
URBAN GROWTH ASSESSMENT AND ITS IMPACT ON DEFORESTATION AT NATIONAL BOTANICAL PARK, MALAYSIA USING REMOTE SENSING AND GIS TECHNIQUES	2806
<i>Nurul Ain Mohd Darus, Zulkiflee Abd Latif</i>	
ACCOUNTING FOR TEMPORAL INFORMATION FROM DENSE TIME-SERIES COARSE-SCALE SATELLITE DATA FOR SPATIO-TEMPORAL DOWNSCALING	2816
<i>Yeseul Kim, No-Wook Park</i>	
STUDY ON EXTRACTING PRECIPITATION INFORMATION USING INFRARED BANDS OF HIMAWARI-8	2821
<i>Yuko Kishida, Keiji Imaoka, Hidenori Shingin, Kakuji Ogawara</i>	
ANATOMY OF OVERLAY ANALYSIS IN EXAMINING VULNERABILITY FACTORS OF FLOODED AREA IN BAGO REGION, MYANMAR	2830
<i>Mu Mu Than, Khin Mar Yee, Kyi Lint, Tin Tin Mya, Thidar Win</i>	
PRIMARY CLOUDBOW RETRIEVAL OF CLOUD DROPLET SIZE DISTRIBUTION FROM POLDER	2840
<i>Huazhe Shang, Husi Letu, Jérôme Riedi, François-Marie Bréon</i>	
DETERMINATION OF PARAMETERS FOR EVERGREEN BROADLEAF FORESTS IN GROSS PRIMARY PRODUCTION CAPACITY ESTIMATION ALGORITHM	2842
<i>Aika Wakai, Rinako Yoshioka, Kanako Muramatsu</i>	

A PRELIMINARY STUDY ON UTILIZING 3D VECTOR TERRAIN DATA FOR SATELLITE VISIBILITY ANALYSIS IN URBAN AREA	2850
<i>Ya-Hsuan Lu, Jen-Yu Han</i>	
HOTSPOT ANALYSIS ON MARKETING ASSESSMENT OF MOBILE PHONE SHOPS WITHIN DAGON MYOTIT (NORTH).....	2858
<i>Kyi Lint Khin Mar Yee, Mu Mu Than, May Myat Thu, Mar Lar Han, Moe Thidar Htwe</i>	
THE DISTRIBUTION OF SUPERCOOLED WATER CLOUDS FROM HIMAWARI-8 MEASUREMENTS AND OPTICAL PROPERTIES OF ITS PARTICLES.....	2870
<i>Ziming Wang, Husi Letu, Huazhe Shang</i>	
DETECTING BUILDING BOUNDARY USING RESIDUAL U-NET	2871
<i>Suhong Yoo, Jisang Lee, Junsu Bae, Honggyoo Sohn</i>	
A SELF-CALIBRATION METHOD FOR TERRESTRIAL LASER SCAN	2873
<i>Tengfei Zhou, Xiaojun Cheng, Rui Shan</i>	
RETRIEVAL OF SURFACE SOLAR RADIATION FROM HIMAWARI-8 MEASUREMENTS	2880
<i>Run Ma, Husi Letu</i>	
NONLINEAR RELATIVE RADIOMETRIC NORMALIZATION FOR LANDSAT 7 AND LANDSAT 8 IMAGERY.....	2881
<i>Lino Garda Denaro, Chao Hung Lin</i>	
THE EFFICIENCY OF GSD NORMALIZATION FOR OBJECT DETECTION IN AERIAL IMAGES.....	2888
<i>Taegoo Kim, Ildoo Kim, Jonghyuck Park, Jihoon Lee</i>	
PRELIMINARY TESTS ON NON-METRIC CAMERA SELF-CALIBRATION BY USING WAVELET ADDITIONAL PARAMETERS	2897
<i>Jun-Fu Ye, Jaan-Rong Tsay</i>	
MASSIVE POINT CLOUD PROCESSING ON HADOOP: CHALLENGES AND PROPOSED SOLUTION.....	2904
<i>Minh Hieu Nguyen, Sanghyun Yoon, Sangyoon Park, Joon Heo</i>	
VALIDATING THE AGRICULTURAL DROUGHT IMPACTS IN THE PHILIPPINES DURING THE 2019 EL NIÑO	2910
<i>Odette B. Enricuso, Gay Jane P. Perez, Raymond Jess G. Goliat, Harry Casimir E. Merida, Cara Patricia I. Canlas, Arlo Jayson C. Sabuito</i>	
LANDSLIDE SUSCEPTIBILITY MODELING WITH FREQUENCY RATIO, LOGISTIC REGRESSION, ARTIFICIAL NEURAL NETWORK AND THE COMBINATION METHOD	2911
<i>Van-Trung Chu, Shou-Hao Chiang, Than-Huang Lin</i>	
TROPICAL CYCLONE GENESIS DETECTION USING COMS DATA WITH MACHINE LEARNING APPROACHES	2921
<i>Seongmun Sim, Jungho Im</i>	
SPECTRAL SIMULATION ON REMOTE SENSING REFLECTANCE OF PETROLEUM-CONTAMINATED WATER BODY USING HYDROLIGHT	2923
<i>Junjie Yang, Miaofen Huang, Weijian Luo, Yang Zhuang, Bingcai Chen, Zhonglin Wang</i>	
ANALYZING THE RELATIONSHIP BETWEEN SOIL WATER TRIGGERING INDEX AND LANDSLIDE FREQUENCY- A CASE STUDY OF TYPHOON MORAKOT	2933
<i>Hung-Chu Ho, Shou-Hao Chiang</i>	
OFFSETTING THE INCREASE IN SOIL EROSION DUE TO RISING R-FACTORS BY DECREASING C-FACTORS OF BARE LANDS.....	2934
<i>Tse-Wei Lo, Walter Chen</i>	
OBSERVING 2018 MW 6.4 HUALIEN EARTHQUAKE SURFACE DISPLACEMENT WITH SBAS INSAR AND GNSS.....	2941
<i>Chun-Kai Hung, Peter T. Y. Shih</i>	
DEVELOPMENT OF DECISION-MAKING TOOLS FOR DROUGHT MONITORING AND EARLY WARNING IN KYRGYZSTAN.....	2942
<i>Sugyeong Park, Sea Jin Kim, Eunbeen Park, Hangnan Yu, Sungeun Cha, Hyun-Woo Jo, Chul-Hee Lim, Halim Lee, Woo-Kyun Lee</i>	
INTEGRATION OF MULTI-SATELLITE INDICES FOR DROUGHT MONITORING IN DIVERSE CLIMATE ZONE OVER EAST ASIA	2947
<i>Bokyung Son, Sumin Park, Jungho Im, Seohui Park, Yinghai Ke</i>	
SPATIOTEMPORAL EVALUATION OF HISTORICAL DROUGHT IN THE PHILIPPINES.....	2949
<i>Michael Angelo P. Valet, Gay Jane P. Perez, Odette B. Enricuso, Josefino C. Comiso</i>	
APPLICATION OF GPM IMERG SATELLITE-BASED PRECIPITATION PRODUCTS FOR FLOOD RUNOFF SIMULATION IN A DAM WATERSHED	2957
<i>Younghyun Cho, Joon-Woo Noh, Eul-Rae Lee</i>	

MAPPING AND MONITORING BURNED AREA/VEGETATION CLEAR-CUT IN RIAU OF SUMATRA FROM TIME SERIES FO SENTINEL-1 DATA	2959
<i>Ping Chen, Soo Chin Liew, Leong Keong Kwoh</i>	
LANDSLIDES DETECTION FROM SATELLITE IMAGERY USING A DEEP LEARNING TECHNIQUE.....	2965
<i>Yung-Ming Tsai, Kuo-Chen Chang</i>	
MAKASAR FLOOD AREA DETECTION USING SENTINEL-1 GRD SATELLITE IMAGE WITH USE OF CHANGE INDEX AND ESA-SNAP	2975
<i>Dadan Ramdani</i>	
OBSERVATION OF SURFACE SUBSIDENCE BY INTERFEROMETRIC SAR TIME SERIES ANALYSIS IN CHIBA PREFECTURE.....	2985
<i>Ryota Aoto, Keiji Imaoka, Hidenori Shingin, Kakuji Ogawara</i>	
IMPACT ASSESSMENT OF SURFACE DRYNESS AND SNOW COVER ON WILDFIRES IN FAR EAST RUSSIA	2993
<i>Haemi Park, Wataru Takeuchi</i>	
ASSESSING LENGTH OF GROWING PERIOD AS AN INDICATOR OF CLIMATE CHANGE.....	2997
<i>Ragunath Kaliaperumal, Pazhanivelan Sellaperumal, Kumaraperumal Ramalingam</i>	
SPATIO-TEMPORAL ASSESSMENT OF MONTHLY GPM AND TRMM: A PRELIMINARY STUDY IN COASTAL AND INLAND AT SABAH AND SARAWAK, MALAYSIA	2998
<i>Muhammad Izuan Nadzri, Aidy M Muslim, Mohammad Shawkat Hossain, Mou Leong Tan, Mohd Sofiyah Sulaiman</i>	
CLIMATE CHANGE AND ITS IMPACT ON GLACIERS IN HINDU KUSH REGION: A CASE STUDY OF YARKHUN VALLEY, CHITRAL PAKISTAN	3007
<i>Alamgeer Hussain, Jay Sagin, Aigul Bekbayeva, Muhammad Abid</i>	
MODTRAN-BASED RETRIEVAL OF AEROSOL OPTICAL THICKNESS OVER CHIBA AREA FROM HIMAWARI-8/AHI VISIBLE IMAGES.....	3019
<i>Zixuan Xue, Nofel Lagrosas, Hiroaki Kuze</i>	
IMAGE RECOGNITION APPLIED TO THE ZHUOSHUI RIVER BASIN RUNOFF VARIATIONS	3026
<i>Chia-Cheng Yeh, Yang-Lang Chang, Jin-Cheng Fu, Chun-Mao Huang</i>	
INTEGRATION OF SELF-ORGANIZING MAP AND MACHINE LEARNING METHODS TO EXTRACT SHORELINES FROM LANDSAT-8 IMAGES.....	3036
<i>Bulent Bayram, Abdulkadir Ince</i>	
UPDATING CADASTRAL MAPS USING DEEP CONVOLUTIONAL NETWORKS AND HYPERSPECTRAL IMAGING	3044
<i>Ah-Ram Song, Seula Park, Yong-Il Kim</i>	
HYPERSPECTRAL IMAGE CLASSIFICATION USING SPECTRAL LSTM NETWORKS	3049
<i>Simranjit Singh, Singara Singh Kasana</i>	
A NEURAL NETWORK-BASED LAND USE REGRESSION MODEL TO ESTIMATE SPATIAL-TEMPORAL VARIABILITY OF NITROGEN DIOXIDE	3056
<i>Pei-Yi Wong, Chih-Da Wu, Huey-Jen Su</i>	
EFFICIENCY OF DIFFERENT MACHINE LEARNING METHODS FOR SHORELINE EXTRACTION FROM UAV IMAGES	3065
<i>Bulent Bayram, Dursun Zafer Seker, Burak Akpınar</i>	
COMPARISON OF LUR-BASED AND ANN-BASED PM2.5 CONCENTRATION ESTIMATION OVER TAIPEI METROPOLIS	3075
<i>Dewinta Heriza, Chao-Hung Lin, Chih-Da Wu</i>	
MACHINE LEARNING APPROACHES TO ESTIMATE CHLOROPHYLL-A CONCENTRATION USING GOCI SATELLITE DATA	3083
<i>Hyun-Young Choi, Young-Jun Kim, Jungho-Im</i>	
THAILAND YOUTH INNOVATION INTERNSHIP PROGRAM: SATELLITE TELECOMMUNICATION ENGINEER.....	3085
<i>Warinthorn Kiadtikornthaweeyot, Natthawat Hongkarnjanakul, Thanchanok Khlongkhlaew, Prayat Puangjaktha, Peerapong Aramsoontornsuk</i>	
CORE PROCESSING FOR ANALYSIS READY DATA OF KOMPSAT 3A IMAGE: ABSOLUTE ATMOSPHERIC CORRECTION.....	3092
<i>Kiwon Lee, Yongseung Kim, Kwangseob Kim, Sun-Gu Lee</i>	
HARNESSING EARTH OBSERVATION SYSTEM FOR FAST-REALIZING SUSTAINABLE DEVELOPMENT GOAL (SDG) ON CLEAN WATER AND SANITATION	3099
<i>Mazlan Hashim, Mohd Rizaludin Mahmud, Mohd Nadzri Reba, Nurul Nadia Yahya</i>	
TEMPORAL AND SPATIAL ANALYSIS OF CRIMINAL PATH OF DIFFERENT TYPES OF SERIAL SEXUAL OFFENDERS	3105
<i>Hsu-Hsien Chen, Pei-Fen Kuo, Sheng-Ang Shen</i>	

SAR2MAP : SAR TO MAP IMAGE TRANSFER WITH CONDITIONAL GENERATIVE ADVERSARIAL NETWORKS.....	3115
<i>Mustafa Yagmur, Kento Doi, Akira Iwasaki</i>	
EVALUATION AND ASSESSMENT OF SOLAR ENERGY OVER WATER BODIES OF UTTARAKHAND	3119
<i>Mudit Kapoor, Rahul Dev Garg, Yashika Chaudhary, Ashish Kumar</i>	
MAPPING OF GROUND-LEVEL OZONE DISTRIBUTION AND DETERMINING SUITABLE LOCATIONS FOR MONITORING STATIONS IN THE NATIONAL CAPITAL REGION, PHILIPPINES.....	3120
<i>Areanne Katrice K. Umali, Iris Anne M. Ventura, Edgardo G. Macatulad</i>	
THE SPATIAL RELATIONSHIP BETWEEN WEATHER AND ONCIDIUM PRODUCTION.....	3130
<i>Hafsah Fatihul Ilmy, Pei-Fen Kuo, Tzu-En Huang</i>	
INVESTIGATION AND MAPPING THE RELATIONSHIP BETWEEN 4G SIGNAL STRENGTH AND TOPOGRAPHY FOR DIFFERENT OPERATORS	3140
<i>Eyup Kaya, Sinasi Kaya, Dursun Zafer Seker</i>	
RAPID ACQUISITION AND ANALYSIS OF DISASTER INFORMATION FROM SOCIAL MEDIA	3148
<i>You-Rui Liu, Pai-Hui Hsu</i>	
TWITTER ANALYTICS FOR INTEGRATED RESEARCH IN BIODIVERSITY	3156
<i>Sameer Saran, Laksh Singla, Priyanka Singh</i>	
PARTICIPATORY GEOGRAPHIC INFORMATION SYSTEM (PGIS) FOR DEVELOPED THE ONLINE MAP OF HISTORICAL SOURCE IN WORLD WAR II, PAK PHRAEK ROAD COMMUNITY, KANCHANABURI, THAILAND	3163
<i>Komsan Sriboonruang, Narong Punkong, Malinee Kumkrua</i>	
Author Index	