
COMPUTER AND COMPUTING TECHNOLOGIES IN AGRICULTURE II, VOLUME 1

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- Open conferences;
- Working conferences.

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COMPUTER AND COMPUTING TECHNOLOGIES IN AGRICULTURE II, VOLUME 1

*The Second IFIP International Conference on Computer
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Contents

Foreword	xvii
Organizing Committee	xx
Program Committee	xxi
Secretariat	xxiv
Papers	
SOME POSSIBILITIES OF STUDYING THE PRECISION FARMING IN ESTONIA, METHODS AND RESULTS OF COMPLEX INVESTIGATION	1
<i>Võsa, T., Nugis, E., Vennik, K., Meripõld, H., Viil, P., Kuht, J.</i>	
OPTIMAL PATH PLANNING PROGRAM FOR AUTONOMOUS SPEED SPRAYER IN ORCHARD USING ORDER-PICKING ALGORITHM	9
<i>T. S. Park, S. J. Park, K. Y. Hwang, S. I. Cho</i>	
THE USE OF A METEOROLOGICAL STATION NETWORK TO PROVIDE CROP WATER REQUIREMENT INFORMATION FOR IRRIGATION MANAGEMENT	19
<i>Reimar Carlesso, Mirta Teresinha Petry, Celio Trois</i>	
USE OF CERES-WHEAT MODEL FOR WHEAT YIELD FORECAST IN BEIJING	29
<i>Xian Wang, Chunjiang Zhao, Cunjun Li, Liangyun Liu, Wenjiang Huang, Pengxin Wang</i>	
DATA ENVELOPMENT ANALYSIS ON EFFICIENCY EVALUATION OF IRRIGATION-FERTILIZATION SCHEMES FOR WINTER WHEAT IN NORTH CHINA	39
<i>Songhao Shang, Xiaomin Mao</i>	

LAND-USE CHANGE DYNAMICS AND CLUSTER ANALYSIS OF AGRICULTURAL STRUCTURE IN THE ZULI RIVER BASIN IN RECENT 20 YEARS	49
<i>Huiming Liu, Fengmin Li, Guojun Sun, Yu Yang</i>	
THE CHANGE OF LAND COVER/LAND USE IN EJINA OASIS OVER 20 YEARS	59
<i>Xiaoyou Zhang, Tongtong Men, Maoxian Zhou</i>	
ASSESSMENT AND MAPPING OF HEAVY METALS POLLUTION IN TEA PLANTATION SOIL OF ZHEJIANG PROVINCE BASED ON GIS	69
<i>Lianqing Zhou, Zhou Shi, Youwei Zhu</i>	
APPLICATION AND ESTIMATION OF WHEAT PRODUCTION EMULATION SYSTEM IN HEBEI PROVINCE	79
<i>Shijuan Li, Yeping Zhu, Yan Xue</i>	
FAST MEASUREMENT OF SOLUBLE SOLID CONTENT IN MANGO BASED ON VISIBLE AND INFRARED SPECTROSCOPY TECHNIQUE	89
<i>Jiajia Yu, Yong He</i>	
USE OF NIR SPECTROSCOPY AND LS-SVM MODEL FOR THE DISCRIMINATION OF VARIETIES OF SOIL	97
<i>Zengfang Li, Jiajia Yu, Yong He</i>	
GIS-BASED DISASTER WARNING SYSTEM OF LOW TEMPERATURE AND SPARE SUNLIGHT IN GREENHOUSE	107
<i>Ruijiang Wei, Chunqiang Li, Xin Wang</i>	

STUDY ON FOREST VEGETATION CLASSIFICATION BASED ON MULTI-TEMPORAL REMOTE SENSING IMAGES	115
--	-----

Xia Jing, Jihua Wang, Wenjiang Huang, Liangyun Liu, Jindi Wang

THE SPATIAL PATTERN CHARACTERISTICS OF SOIL NUTRIENTS AT THE FIELD SCALE	125
---	-----

Yujian Yang, Jianhua Zhu, Xueqin Tong, Dianchang Wang

RESEARCH ON PRECISION IRRIGATION IN WESTERN SEMIARID AREA OF HEILONGJIANG PROVINCE BY INTERPRETING DATA SOURCE SPATIAL DISTRIBUTION	135
---	-----

Qiang Fu, Qiuxiang Jiang, Zilong Wang

APPLICATION OF 3S TECHNOLOGY TO LAND CONSOLIDATION IN CHERNOZEM REGION OF CHINA	145
--	-----

Boqi Wang, Nan Li, Wei Li, Jinmin Hao

SIMULATION DESIGN OF THE SPIRAL GROOVE PRECISION SEED-METERING DEVICE FOR SMALL GRAINS	155
---	-----

Dongguang Zhang, Yuming Guo

DEM-BASED STUDY OF HABITAT CHARACTERISTICS OF TORREYA FENGQIAO IN KUAIJI MOUNTAIN, CHINA	161
---	-----

Xiaoming Wang, Ke Wang, Weijiu Ao, Jinsong Deng

QUANTITATIVELY OPTIMIZED SELECTION OF PROPER SCALE IN LAND USE CARTOGRAPHIC GENERALIZATION	169
---	-----

Xiaopei Zhang, Tailai Yan, Xiaogang Cui, Dehai Zhu

APPLICATION OF GENETIC ALGORITHM IN THE MODELING OF LEAF CHLOROPHYLL LEVEL BASED ON VIS/NIR REFLECTION SPECTROSCOPY	179
---	-----

Haiqing Yang, Yong He

PLANTING-DENSITY OPTIMIZATION STUDY FOR TOMATO FRUIT SET AND YIELD BASED ON FUNCTIONAL-STRUCTURAL MODEL GREENLAB	189
--	-----

Lili Yang, Yiming Wang, Qiaoxue Dong

SUSTAINABLE AGRICULTURAL PARADIGM OF MOUNTAIN-OASIS- ECOTONE-DESERT SYSTEM IN INLAND MANASI RIVER BASIN, XINJIANG PROVINCE, NORTHWEST CHINA	197
--	-----

Huiming Liu, Weiming Chen, Xiaobin Dong, Xinshi Zhang

GIS-BASED CROP SUPPORT SYSTEM FOR COMMON OAT AND NAKED OAT IN CHINA	209
--	-----

Fan Wan, Zhen Wang, Fengmin Li, Huhua Cao, Guojun Sun

STUDY ON SOIL NUTRIENT MANAGEMENT AND FERTILIZATION MODEL IN NINGXIA COUNTY TERRITORY WITH GIS	223
--	-----

Libo Liu, Guomin Zhou

EXTENSION EVALUATION MODEL OF LAND DESTRUCTION DEGREE IN MINING AREA AND ITS APPLICATION	233
---	-----

Hongbo Jin, Yuanfang Huang, Shiwen Zhang, Guan Gong

DYNAMIC SIMULATION MODEL FOR PRODUCTION AND DRY MATTER ACCUMULATION IN PEANUT	245
--	-----

Lei Xu, Peiling Yang, Shumei Ren, Tao Zhang, Yuguo Han

AUTOMATED DIGITAL IMAGE ANALYSES FOR ESTIMATING PERCENT GROUND COVER OF WINTER WHEAT BASED ON OBJECT FEATURES	253
---	-----

Chunjiang Zhao, Cunjun Li, Qian Wang, Qingyan Meng, Jihua Wang

RESEARCH ON THE METHOD OF GIS-BASED ANALYSIS ON AGRICULTURAL REGIONAL COMPETITIVE INDUSTRIES	265
--	-----

Kaimeng Sun, Yeping Zhu, Yanchao Xu

STUDY AND APPLICATION ON CLOUD COVERED RATE FOR AGROCLIMATICAL DISTRIBUTION USING IN GUANGXI BASED ON MODIS DATA	275
--	-----

Xin Yang, Shiquan Zhong, Han Sun, Zongkun Tan, Zheng Li, Meihua Ding

RESEARCH ON THE SPATIAL VARIABILITY OF SOIL MOISTURE	285
--	-----

Changli Zhang, Shuqiang Liu, Xianyue Zhang, Kezhu Tan

EXTRACTION OF REMOTE SENSING INFORMATION OF BANANA UNDER SUPPORT OF 3S TECHNOLOGY IN GUANGXI PROVINCE	293
---	-----

Xin Yang, Han Sun, Zongkun Tan, Meihua Ding

THE EXPLOITATION OF WEBGIS BASED ON ARCGIS SERVER AND AJAX	299
--	-----

Xue Lei, Li Lin, Longhe Wang, Qin Jian

MONITORING FREEZE INJURY AND EVALUATING LOSING TO SUGAR-CANE USING RS AND GPS	307
---	-----

Zongkun Tan, Meihua Ding, Xin Yang, Zhaorong Ou

ANALYSES ON REGIONAL CULTIVATED LAND CHANGE BASED ON QUANTITATIVE METHOD	317
---	-----

Yingui Cao, Chun Yuan, Wei Zhou, Jing Wang

RECONSTRUCTION OF 3D DIGITAL IMAGE OF WEEPING FORSYTHIA POLLEN	329
---	-----

Dongwu Liu, Zhiwei Chen, Hongzhi Xu, Wenqi Liu, Lina Wang

STUDY AND DEVELOPMENT OF MOBILE TRACING TERMINAL BASED ON GPRS FOR AGRICULTURAL PRODUCTS QUALITY TRACKING	335
---	-----

Shihong Liu, Hong Meng, Huoguo Zheng, Jiangshou Wu

GIS-BASED ELABORATE SPATIAL PREDICTION OF SOIL NUTRIENT ELEMENTS USING ANCILLARY TERRAIN DATA IN CHONGQING TOBACCO PLANTING REGION, CHINA	345
---	-----

Xuan Wang, Jiake Lv, Chaofu Wei, Deti Xie

AGRICULTURAL CROSS LANGUAGES INFORMATION RETRIEVAL SCHEMA BASED ON MUTI-THESAURUS MAPPING	357
---	-----

Chun Chang, Wenlin Lu

QUANTIFY THE LANDSCAPE EFFECT OF RURAL REGION PLANNING NEAR METROPOLIS USING HIGH SPATIAL RESOLUTION REMOTE SENSING-CASE STUDY IN GAOLIYING TOWN IN BEIJING	365
--	-----

Shiliang Liu, Yuhong Dong, Wei Fu, Min Yang

EFFECTS OF LAND USE ON SOIL QUALITY ON THE LOESS PLATEAU IN NORTH-WEST SHANXI PROVINCE	375
---	-----

Qiang Zhang, Li Wang, Ruirui Ji, Zhiping Yang, Jianjie Zhang

SPATIAL DIFFERENT ANALYSIS OF LAND USE/LAND COVER CHANGE AND HUMAN IMPACT IN TYPICAL OASIS IN ARID LAND	387
---	-----

Hongwei Wang, Tash polat Tiyp, Jianli Ding, Jiangyan Luo

THE POTENTIAL GEOGRAPHICAL DISTRIBUTION OF BACTROCERA DORSALIS (DIPTERA: TEPHRIDIDAE) IN CHINA BASED ON EMERGENCE RATE MODEL AND ARCGIS	399
---	-----

Ningbo Wang, Zhihong Li, Jiajiao Wu, Edwin G. Rajotte, Fanghao Wan, Zhiling Wang

CONSTRUCTION STANDARD OF FARMLAND LANDSCAPE PATTERN IN CHINA BASED ON PRECISION AGRICULTURE	413
---	-----

Meichen Fu, Jianjun Zhang

APPLICATION OF GIS COMBINING WITH LIMITS OF VORONOI DIAGRAM IN SOCIOECONOMIC FACTOR OF AGRICULTURAL LAND GRADING	423
--	-----

Zhanlu Zhang, Ying Li

EFFECTS OF LUCC RESULTING FROM TFFP LAND USE PATTERN IN THE YELLOW RIVER DELTA, CHINA	431
---	-----

Xuegong Xu, Xiaofeng Duan, Richard Dawson, Yanhua Liu, Yu He, Huifang Peng, Chaowei Cui

DEFINITION OF MANAGEMENT ZONES OF SOIL NUTRIENTS BASED ON FCM ALGORITHM IN OASIS FIELD	443
--	-----

Xin Lu, Yan Chen

A COM-GIS BASED DECISION TREE MODEL IN AGRICULTURAL APPLICATION	455
---	-----

Wei Cheng, Ke Wang, Xiuying Zhang

STUDY ON SOIL SPECIAL VARIABILITY AND CROPS OPTIMAL LAYOUT BASED ON GIS IN THE WEST-NORTHERN PLATEAU OF HEBEI PROVINCE	465
<i>Lixiao Feng, Xiong Du, Jizong Zhang, Cundong Li, Lifeng Zhang</i>	
RESEARCH AND APPLICATION OF PRECISION FERTILIZATION ON MAIZE	477
<i>Helong Yu, Guifen Chen, Dayou liu</i>	
PROBABILISTIC YIELD FORECAST BASED ON A PRODUCTION PROCESS MODEL	487
<i>Jüri Kadaja, Triin Saue, Peeter Vii</i>	
POTATO PRODUCTION AS AFFECTED BY CROP PARAMETERS AND METEOROLOGICAL ELEMENTS	495
<i>André B. Pereira, Nilson A. Villa Nova, Antonio R. Pereira</i>	
REGRESSION MODELS FOR SAFFRON YIELDS IN IRAN	509
<i>Sanaeinejad, S.H., Hosseini, S.N</i>	
GRAPSI_DRAW DIGITAL PSYCHROMETRIC CHART	519
<i>Daniela de C. Lopes, Evandro de C. Melo, José H. Martins, Luis Manuel N. Gracia, Adriana C. Guimarães</i>	
FORECASTING CROP WATER REQUIREMENT BY ET-HS MODEL FOR ARID AND SEMI ARID REGION OF IRAN	529
<i>Payam Najafi, Kamran Asgari</i>	
SIMULATION AND PREDICTION OF CD CUMULATION IN SOIL IRRIGATED BY RECLAIMED WATER BASED ON MATLAB	537
<i>Zhanbin Huang, Jinfeng Deng, Zhihua Jiao</i>	

<i>Contents</i>	xiii
NUMERICAL SIMULATION OF AIR-WATER BUBBLY FLOW IN AXIAL FLOW PUMP IMPELLER <i>Minguan Yang, Xiaolian Wu, Can Kang</i>	545
THE SIMULATION OF AGRICULTURAL NON-POINT SOURCE POLLUTION IN SHUANGYANG RIVER WATERSHED <i>Yongsheng Ma, Xiucui Tan, Qiuyue Shi</i>	553
ANNUAL PRECIPITATION SERIES WAVELET ANALYSIS OF WELL-IRRIGATION AREA IN SANJIANG PLAIN <i>Dong Liu, Qiang Fu, Yongsheng Ma, Aihua Sun</i>	563
MODELING AND SIMULATION FOR A VARIABLE SPRAYER RATE SYSTEM <i>Yan Shi, Anbo Liang, Haibo Yuan, Chunmei Zhang, Junlong Li</i>	573
RESEARCH ON CROP SIMULATION MODEL BASED ON PDA <i>Jianbing Zhang, Yeping Zhu</i>	585
CALCULATION OF RESOURCES CARRYING CAPACITY BASED ON ECOLOGICAL FOOTPRINT IN BEIJING MOUNTAINOUS AREA <i>Jiuwen Sun, Chang Liu, Biaoqiang Luo</i>	593
DESIGN OF SIMULATION STRATEGY FOR CORN CLEANING ON DISCRETE ELEMENT METHOD <i>Hua Li, Hongju Gong, Wenqing Yin</i>	603
DECISION SUPPORT SYSTEM BY (ORDERED WEIGHT AVERAGING) OWA METHOD <i>Hooman Sharifnasab, Reza Alimardani, Mohammad Reza Akbari</i>	613

PRSRW: AN EXPERT SYSTEM FOR POSTULATING AND INFERRING RESISTANCE GENES TO WHEAT STRIPE RUST	625
<i>Yu Yang, Lianzhi Wang, Shichang Xu, Qiang Bian, Fengle Wang</i>	
AGRICULTURAL MACHINES MANAGEMENT AND ASSIGNMENT SYSTEM OF HEILONGJIANG RECLAMATION AREA	635
<i>Xi Wang, Chun Wang, Weidong Zhuang, Hui Yang</i>	
A DECISION SUPPORT SYSTEM FOR EVALUATING QUALITY SAFETY RISK CONTAMINATED BY WATER POLLUTION IN AQUACULTURE POND	643
<i>Dong Tian, Nan Li, Honghui Huang, Zetian Fu, Xiaoshuan Zhang</i>	
APPLICATION OF COLORED PETRI NET IN MODELING OF AN AGRICULTURAL ENTERPRISE INFORMATION MANAGEMENT SYSTEM	653
<i>Fangtian Zhang, Kaiyi Wang, Jin Sui, Chang Liu, Zhongqiang Liu</i>	
DESIGN OF DECISION-MAKING SYSTEM ABOUT WHEAT SURVEY AND DIRECTIONS FOR SOIL BASED ON GIS IN COUNTY	661
<i>Hao Zhang, Lei Xi, Hua Yu, Shuping Xiong, Hongbo Qiao, Zhongmin Lu, Xinming Ma</i>	
ANALYSIS AND ASSISTANT PLANNING SYSTEM OF REGIONAL AGRICULTURAL ECONOMIC INFORMATION	671
<i>Jie Han, Junfeng Zhang</i>	

RESEARCH OF LITCHI DISEASES DIAGNOSIS EXPERT SYSTEM BASED ON RBR AND CBR	681
--	-----

Bing Xu, Liquun Liu

A DECISION SUPPORT SYSTEM FOR DO PREDICTION BASED ON FUZZY MODEL AND NEURAL NETWORK	689
---	-----

Ruimei Wang, Qigen Liu, Youyuan He, Zetian Fu

QPAIS: A WEB-BASED EXPERT SYSTEM FOR ASSISTED IDENTIFICATION OF QUARANTINE STORED INSECT PESTS	701
--	-----

Han Huang, Edwin G. Rajotte, Zhihong Li, Ke Chen, Shengfang Zhang

RESEARCH AND IMPLEMENT OF MAIZE VARIETY PROMOTION DECISION SUPPORT SYSTEM BASED ON WEBGIS	715
---	-----

Hu Wang, Xiaodong Zhang, Weili Wang, Yuan Zheng

A PDA-BASED FEEDING EXPERT SYSTEM FOR INDOOR INTENSIVE CULTURING OF SOUTHERN FLOUNDER IN CHINA	725
--	-----

Liying Xu, Chengxian Yu, Bin Xing, Daoliang Li

DEVELOPMENT OF MULTI OBJECTIVE PLAN USING FUZZY TECHNIQUE FOR OPTIMAL CROPPING PATTERN IN COMMAND AREA OF AUNDHA MINOR IRRIGATION PROJECT OF MAHARASHTRA STATE (INDIA)	735
--	-----

K. P. Gore, R. K. Panda

RESEARCH ON THE CONTROL OF REACTIVE POWER COMPENSATION BASED ON FUZZY REASONING	743
---	-----

Ping Yang, Yuwen Sun, Jianguo Dong, Yong Yang

RESEARCH ON IMAGE-BASED FUZZY VISUAL SERVO FOR PICKING ROBOT	751
--	-----

Song Jian

DYNAMIC ALLIANCE OF AGRICULTURE PRODUCTS LOGISTICS BASED ON SWARM INTELLIGENCE	761
--	-----

Xinsheng Yao, Yan Cui, Jilai Ying, Jianguang Wei

THE TEMPERATURE FUZZY CONTROL SYSTEM OF BARLEY MALT DRYING BASED ON MICROCONTROLLER	771
---	-----

Xiaoyang Gao, Yang Bi, Lili Zhang, Jingjing Chen, Jianmin Yun

A FUZZY CONTROL IRRIGATION SYSTEM FOR COTTON FIELD	779
--	-----

Jun Zhang, Yandong Zhao, Yiming Wang, Jinping Li

Foreword

The papers in this volume comprise the refereed proceedings of the Second IFIP International Conference on Computer and Computing Technologies in Agriculture (CCTA2008), in Beijing, China, 2008.

The conference on the Second IFIP International Conference on Computer and Computing Technologies in Agriculture (CCTA 2008) is cooperatively sponsored and organized by the China Agricultural University (CAU), the National Engineering Research Center for Information Technology in Agriculture (NERCITA), the Chinese Society of Agricultural Engineering (CSAE), International Federation for Information Processing (IFIP), Beijing Society for Information Technology in Agriculture, China and Beijing Research Center for Agro-products Test and Farmland Inspection, China. The related departments of China's central government bodies like: Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Education and the Beijing Municipal Natural Science Foundation, Beijing Academy of Agricultural and Forestry Sciences, etc. have greatly contributed and supported to this event. The conference is as good platform to bring together scientists and researchers, agronomists and information engineers, extension servers and entrepreneurs from a range of disciplines concerned with impact of Information technology for sustainable agriculture and rural development. The representatives of all the supporting organizations, a group of invited speakers, experts and researchers from more than 15 countries, such as: the Netherlands, Spain, Portugal, Mexico, Germany, Greece, Australia, Estonia, Japan, Korea, India, Iran, Nigeria, Brazil, China, etc. are gathering Beijing to review the new advancement of Information and Communication Technology (ICT) applications for sustainable agriculture and food quality and safety control, to present new research findings, and to look for the new challenges and opportunities in the future.

Information technology, the convergence of computing and communication technologies, has had an enormous impact on all aspects of socio-economic development and human life in the past 30 years. Powered by the unprecedented and continuous advances in microelectronics and photonics, the power and capacity of our expanding information infrastructure has risen exponentially, while simultaneously its cost has fallen also exponentially. At least for the foreseeable future, the exponential pace of technology improvement is likely to be continued. The modern ICT is playing increasingly important roles in every facet of agricultural and biological system improvement. While traditional sectors of agricultural

technology are being constantly updated, the new sectors, such as biological informatics, information network services, information & knowledge-based precision farming system are bringing new concepts and contents into the agricultural & food chain management. The arrival of new requirements for agricultural system sustainability is accompanied by greater challenge in our profession. The goals for farming productivity, resources conservation & environmental sustainability require to develop intelligent equipment, technologies & services in extension of ICT for agriculture. The automated data acquisition is the fit way to provide spatial and temporal high-resolutions and safe documentations. The huge amount of raw data needs to be processed by a easy-to-use and safe data processing systems. A well-founded documentation will be the base of many agricultural applications in the future. A web based data management and information system are able to provide safety and effective information management for the farmers-avoiding problems with local installed software, time and costs. To promote ICT for agriculture, we need “Simplicity Theory”, that is to find the simplest method to solving real problems in farming management. To develop a low-cost with high technologies are the future of innovation activities of ICT engineers for agriculture.

The main subjects of this conference are:

- Exploitation of the strategic problems on ICT for agricultural resources, environment & production system management, web-based technology & agro-information and knowledge service system;

- Spatial information technologies (GPS, GIS, RS) for agriculture, modeling of resources, ecological and biological systems; Precision Agriculture; advanced sensors and instrumentation for farm use; & process automation; expert system and knowledge system & DSS development;

- Applied software development for farm users and macro management;

- Intelligent & virtual technology for agriculture, knowledge dissemination and remote education, etc.

More than 432 academic manuscripts have been received by this organizing committee. After review process by a group of experts, 244 English papers are accepted and published by Spring IFIP US. Taking this opportunity, We would like to express our gratefulness to the hard word by all the contributors and members of Academic Committee.

Finally, we would like to extend the most earnest gratitude to our organizers, College of Information and Electrical Engineering (CAU), EU-China Centre for Information & Communication Technologies (CAU), also to Beijing Eu-Chi Technology Co., Ltd., all members and colleagues of

our preparatory committee, for their generous efforts, hard work and precious time!

This is the Second series of conferences dedicated to real-world applications of computer and computing technologies in agriculture around the world. The wide range and importance of these applications are clearly indicated by the papers in this volume. Both are likely to increase still further as time goes by and we intend to reflect these developments in our future conferences.

Daoliang LI

A handwritten signature in black ink, reading "Daoliang LI" in a cursive style.

Chunjiang Zhao

A handwritten signature in black ink, reading "Chunjiang Zhao" in a cursive style.

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