附件 1

编号__________

工作领域（请选择 1 项）

☐科研单位 ☐事业单位 ☐国有企业

☑教学单位 ☐民营企业 ☐国防科技

中国测绘学会

全国十大科技创新人物推荐表

主要附件

姓　　名　　**李 满 春**

工作单位　　**南京大学**

推荐单位　　**江苏省测绘地理信息学会**

填表日期　　**2019 年 7 月 15 日**

中国测绘学会　　制

目　录

一、获奖证明扫描件 1

1. 国家科学技术进步奖二等奖，序 1，2014 1
2. 教育部科学技术进步奖一等奖，序 1，2013 2
3. 测绘科技进步奖一等奖，序 1，2009 3
4. 地理信息科技进步奖一等奖，序 1，2013 4
5. 地理信息科技进步奖一等奖，序 3，2017 5
6. 国土资源部优秀成果一等奖（江苏省江阴市土地规划），序 2，2001 6
7. 国土资源部优秀成果一等奖（江苏省江都市土地规划），序 3，2001 7
8. 中国工程咨询协会优秀工程咨询成果一等奖，序 6，1998 8
9. 第一届全球乡村规划优秀案例，序 1，2018 9
10. 江苏省高校科技进步奖一等奖，序 1，2016 10
11. 国家级教学成果奖二等奖，序 1，2014 11
12. 国家级教学成果奖二等奖，序 2，2018 12
13. 国家级教学成果奖二等奖，序 2，1997 13
14. 国家精品课程，序 1，2007 14
15. 国家精品在线开放课程，序 1，2017 15
16. 国家精品教材，序 1，2011 16
17. “十五”国家级规划教材，序 1，2003 17
18. “十一五”国家级规划教材，序 1，2006 18
19. “十二五”国家级规划教材，序 1，2014 19
20. 全国高校 GIS 教学成果奖特等奖，序 1，2017 20
21. 江苏省教学成果奖一等奖，序 1，2013 21
22. 江苏省教学成果奖一等奖，序 2，1997 22
23. 江苏省高等学校一类精品课程，序 1，2006 23
24. 全国大学生“挑战杯”交叉创新一等奖（指导教师），2013 24
25. 中国大学 MOOC--爱课程（iCourse）年度优秀教师，序 1，2016 25
26. 国家教委科技进步奖三等奖，序 1，1996 26
27. 美国摄影测量与遥感学会最佳论文“波音奖”，序 5，2017 27

28. 国际摄影测量与遥感协会最佳论文奖，序 4，2019 28
29. 江苏省（省级）优秀博士论文奖（指导教师），2018 29
30. 江苏省（省级）优秀博士论文奖（指导教师），2017 30
31. 江苏省（省级）优秀博士论文奖（指导教师），2016 31
32. 江苏省（省级）优秀硕士论文奖（指导教师），2017 32
33. 江苏省（省级）优秀硕士论文奖（指导教师），2011 33
34. 江苏省（省级）优秀硕士论文奖（指导教师），2010 34
35. 江苏省（省级）优秀硕士论文奖（指导教师），2009 35

二、知识产权证明扫描件 36

1. 代表性学术论文 38

1.1. A systematic comparison of different object-based classification techniques using high spatial resolution imagery in agricultural environments. 2016，*International Journal of Applied Earth Observation and Geoinformation*. 高被引论文 38

1.2. A review of supervised object-based land-cover image classification. 2017，*ISPRS Journal of Photogrammetry and Remote Sensing.* 高被引与热点论文......................................39

1.3. Post-earthquake assessment of building damage degree using LiDAR data and imagery. 2008, *Science in China Series E-Technological Sciences*. 40

1.4. Remotely sensed soil temperatures beneath snow-free skin-surface using thermal observations from tandem polar-orbiting satellites: An analytical three-time-scale model. 2014，*Remote Sensing of Environment.* 41

1.5. Training set size, scale, and features in Geographic Object-Based Image Analysis of very high resolution unmanned aerial vehicle imagery. 2015，*ISPRS journal of photogrammetry and remote sensing.* 42

1.6. Impacts of LUCC on soil properties in the riparian zones of desert oasis with remote sensing data: A case study of the middle Heihe River basin, China. 2015, *Science of The Total Environment.* 43

1.7. Analysis of landscape fragmentation processes and driving forces in wetlands in arid areas: A case study of the middle reaches of the Heihe River, China. 2014, *Ecological Indicators.*.......44

1.8. Constructing Ecological Networks Based on Habitat Quality Assessment: A Case Study of Changzhou, China. 2017, *Scientific Reports*. 45

1.9. Delineation of a permanent basic farmland protection area around a city centre: Case study of Changzhou City，China. 2017，*Land Use Policy*..46

1.10. Land system evolution of Qinghai-Tibetan Plateau under various development strategies. 2019，*Applied Geography.* 47

2. 代表性国家发明专利......48

2.1. 基于区域聚类的遥感影像分割方法......48

2.2. 基于 Landsat 数据源的珊瑚岛礁遥感信息自动提取方法......49

2.3. 基于相似变换模型的栅格数据坐标转换并行方法......50

2.4. 一种利用多时相雷达数据检测海上静止目标的方法......51

2.5. 一种像素级 SAR 影像时间序列构建的局部自适应配准方法......52

3. 代表性软件著作权......53

3.1. 海岸海洋环境与资源遥感监测与评价分析系统软件......53

3.2. 南京大学校园实景导航软件......54

3.3. 南海及其邻域历史地理情势分析系统......55

3.4. 遥感影像时间序列信息提取系统......56

3.5. 市域尺度国土空间利用质量评价软件......57

三、长江学者、领军人才等证明扫描件......58

1. 长江学者特聘教授，2015......58
2. 国家教学名师，2011......59
3. 国家高层次人才特殊支持计划领军人才，2018......60
4. 教育部高校青年教师奖，2001......61
5. 全国高等学校优秀骨干教师称号，2002......62
6. 自然资源部创新型科技领军人才，2018......63
7. 国家测绘地理信息局科技领军人才，2012......64
8. 首届中国高校十大 GIS 创新人物，2006......65
9. 全国优秀地理科技工作者，2014......66
10. 第五届全国青年地理科技奖，1999......67
11. 第五届江苏省青年科技奖，1998......68
12. 江苏省优秀科技工作者，2016......69
13. 江苏省创新争先奖章，2017......70
14. 江苏省“333 高层次人才培养工程”第一层次，2018......71
15. 全国高校黄大年式教师团队负责人，2018......72
16. 教育部长江学者创新团队（负责人），2015......73

一、获奖证明扫描件

1.　国家科学技术进步奖二等奖，序 1，2014

国家科学技术进步奖

证　书

为表彰国家科学技术进步奖获得者，特颁发此证书。

项目名称：南海及周边地区遥感综合监测与决策支持分析

奖励等级：二等

获 奖 者：李满春

中华人民共和国国务院

2014 年 12 月 12 日

证书号：2014-J-25201-2-02-R01

2. 教育部科学技术进步奖一等奖，序 1，2013


获奖项目：南海及其周边地区环境与资源遥感监测与分析

获 奖 者：李满春（第1完成人）

奖励等级：科学技术进步奖一等奖

奖励日期：2014年01月

证 书 号：2013-194

为表彰在促进科学技术进步工作中做出重大贡献，特颁发此证书。

中华人民共和国教育部

教育部

二〇一四年一月二十九日

3. 测绘科技进步奖一等奖，序 1，2009

测绘科技进步奖

证书

为表彰测绘科技进步奖获得者，特颁发此证书。

项目名称：遥感和GIS在标准农田规划与管理中的应用研究

奖励等级：一等奖

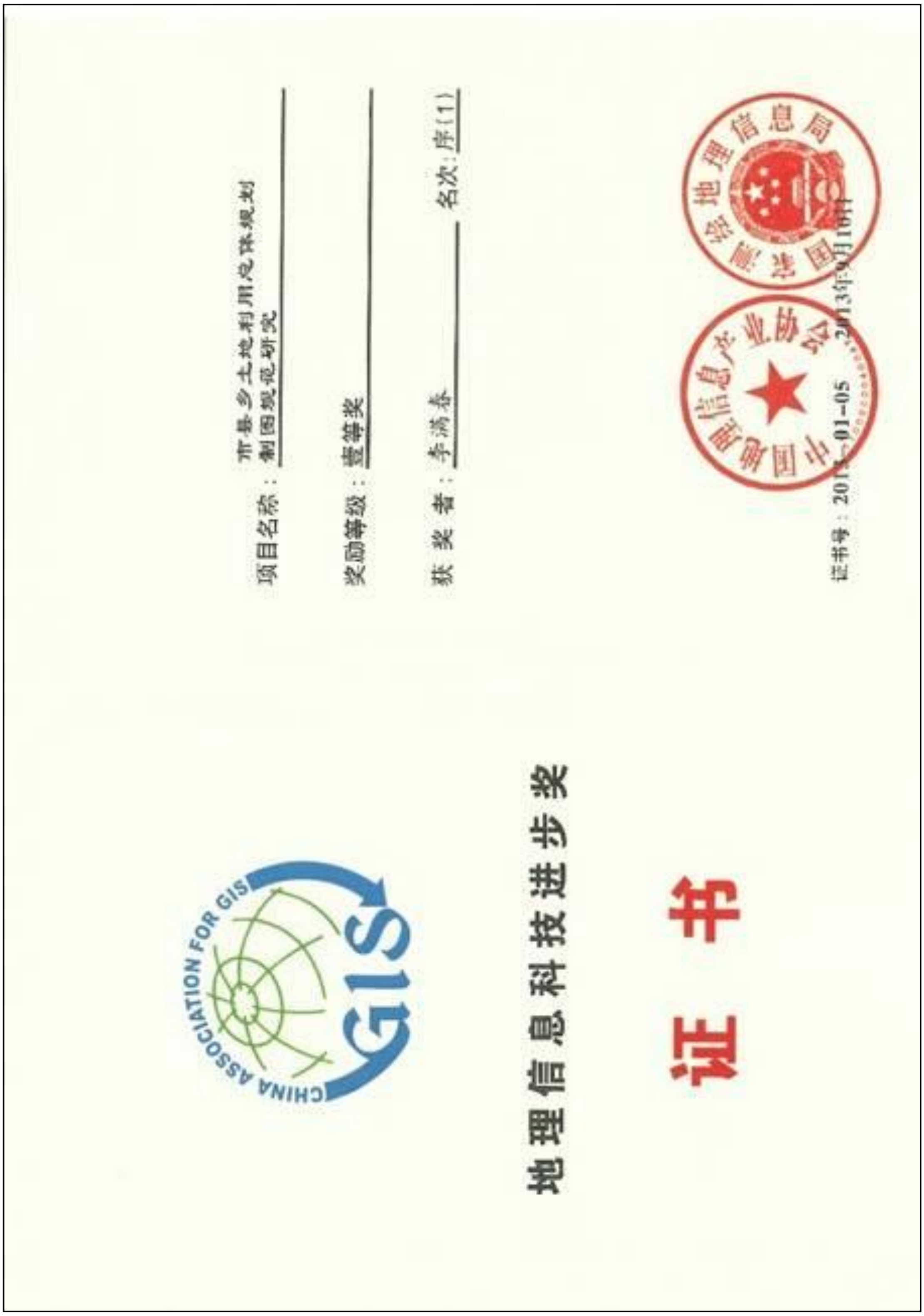
获 奖 者：李满春 名次：第(01)

证书号：2009-01-04

中国测绘学会 国家测绘局

2009 年 12 月 05 日

4.　地理信息科技进步奖一等奖，序 1，2013



地理信息科技进步奖

证　书

项目名称：市县乡土地利用总体规划制图规范研究

奖励等级：壹等奖

获 奖 者：李满春　　名次：序(1)

证书号：2013-01-05

中国地理信息产业协会

国家测绘地理信息局

2013年9月10日

5. 地理信息科技进步奖一等奖，序 3，2017


地理信息科技进步奖

证书

项目名称：面向城市管理的城市GIS关键技术

奖励等级：壹等奖

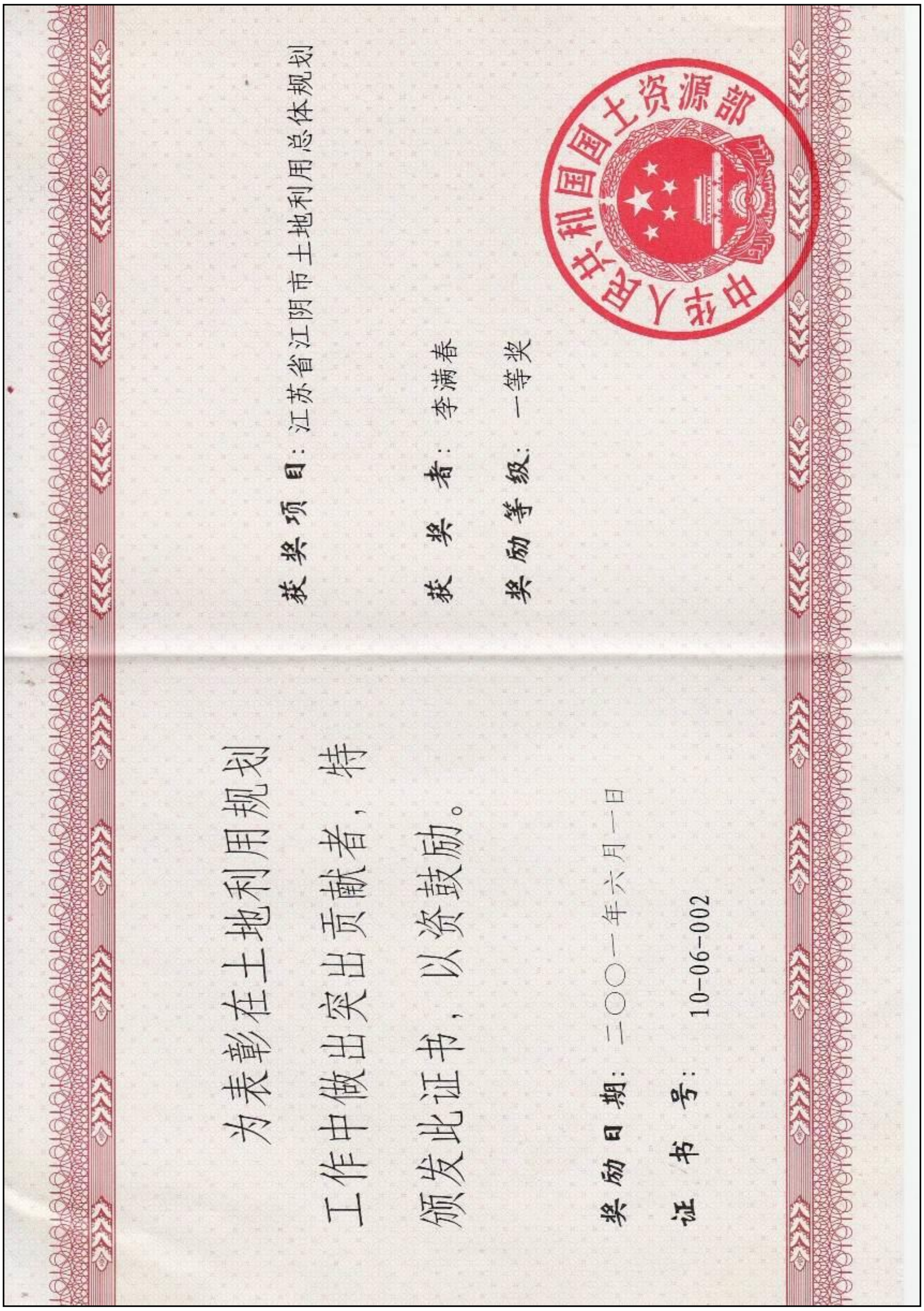
获奖者：李满春　　名次：序(3)

证书号：2017-01-01

中国地理信息产业协会

2017年9月7日

6. 国土资源部优秀成果一等奖（江苏省江阴市土地规划），序 2，2001



为表彰在土地利用规划工作中做出突出贡献者，特颁发此证书，以资鼓励。

奖励日期：二〇〇一年六月一日

证 书 号：10-06-002

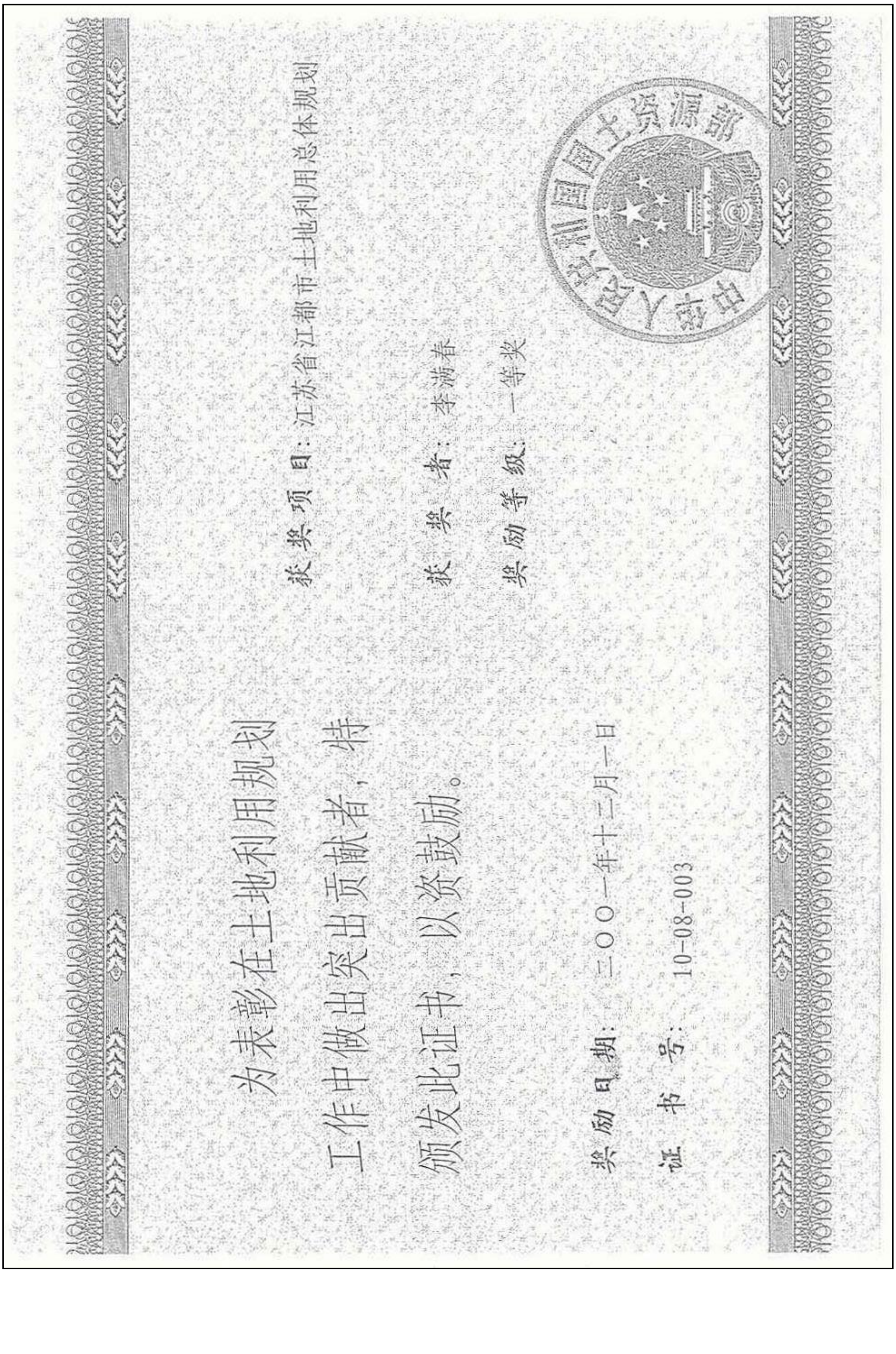
获奖项目：江苏省江阴市土地利用总体规划

获 奖 者：李满春

奖励等级：一等奖

中华人民共和国国土资源部

7.　国土资源部优秀成果一等奖（江苏省江都市土地规划），序 3，2001


为表彰在土地利用规划工作中做出突出贡献者，特颁发此证书，以资鼓励。

获奖项目：江苏省江都市土地利用总体规划

获奖者：李满春

奖励等级：一等奖

中华人民共和国国土资源部

奖励日期：二〇〇一年十二月一日

证书号：10-08-003

8. 中国工程咨询协会优秀工程咨询成果一等奖，序 6，1998

荣誉证书

李满春 同志在荣获中国工程咨询协会一九九七年度优秀工程咨询成果一等奖的项目中做出贡献，特颁发证书，以资表彰。

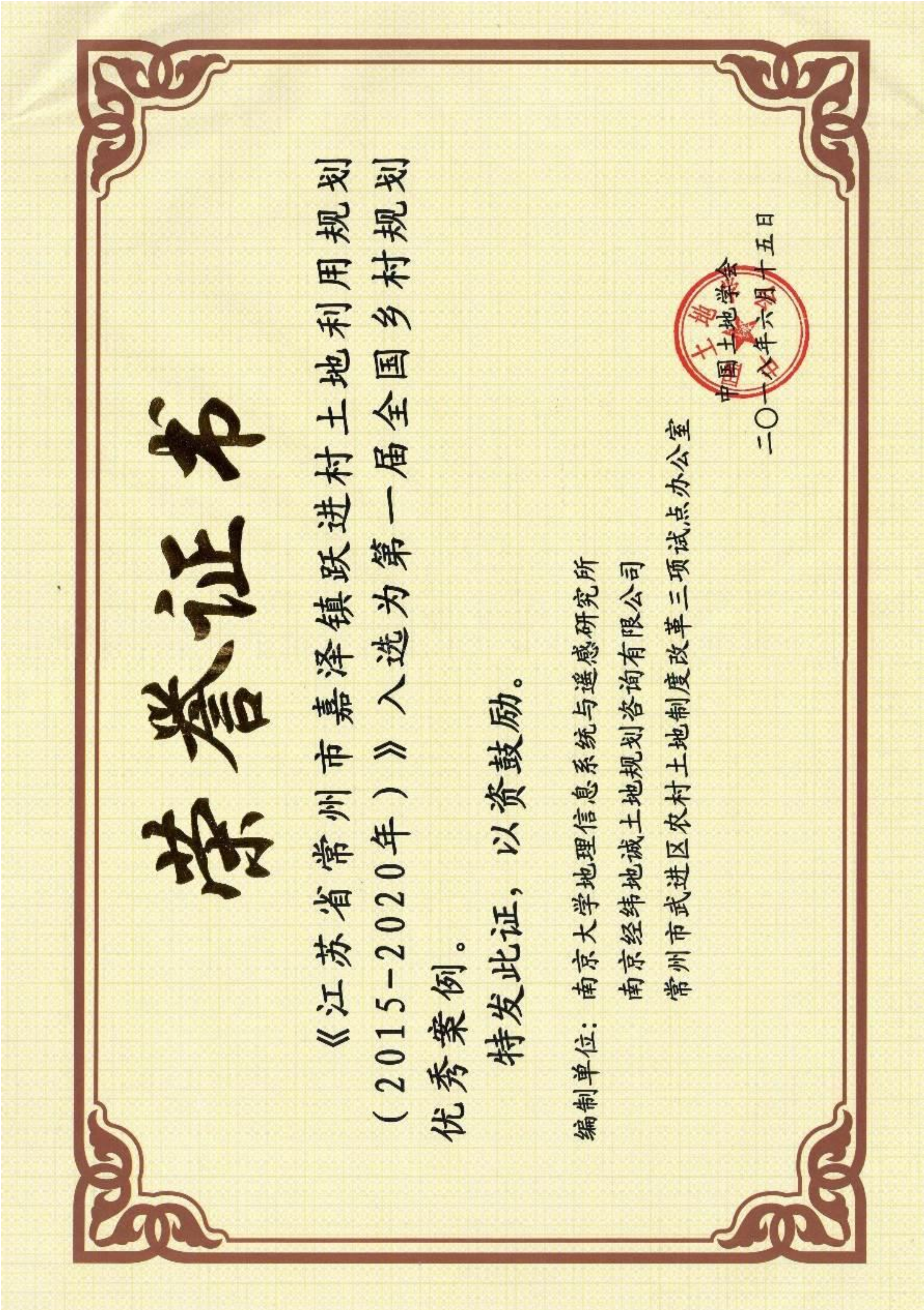
获奖成果名称：深圳市城市水土保持规划

编 号：97014

中国工程咨询协会

一九九八年一月六日

9.　第一届全球乡村规划优秀案例，序 1，2018


荣誉证书

《江苏省常州市嘉泽镇跃进村土地利用规划（2015-2020年）》入选为第一届全国乡村规划优秀案例。

特发此证，以资鼓励。

编制单位：南京大学地理信息系统与遥感研究所

南京经纬地诚土地规划咨询有限公司

常州市武进区农村土地制度改革三项试点办公室

中国土地学会

二〇一八年六月十五日

10. 江苏省高校科技进步奖一等奖，序 1，2016


荣誉证书

为表彰2016年江苏省教育科学研究成果（高校科学技术研究类）获奖者，特颁发此证书，以资鼓励。

成果名称：复杂地理计算数据转换与可视化并行技术

主要完成人：李满春 陈振杰 李 胜 蒲英霞 高 勇 李飞雪 汪国平 王结臣 程 亮

主要完成单位：南京大学 北京大学

奖励等级：一等奖（科技进步奖）

江苏省教育厅

二〇一六年七月

11．国家级教学成果奖二等奖，序 1，2014

国家级教学成果奖

获奖证书

获奖成果：寓教于研的地理信息科学专业创新人才培养模式

获 奖 者：李满春 陈振杰 李飞雪 柯长青
陈 刚 杜培军 马劲松 王结臣
刘永学 程 亮 黄秋昊 陈镜明
李 岩 于 涛 方 强

获奖等级：二等奖

证 书 号：20147068

中华人民共和国教育部

二〇一四年九月

12. 国家级教学成果奖二等奖，序 2，2018

159	以学生为本的化学化工类专业立体化开放工程实践平台的构建与实践	梁志武,王玉枝,蒋健晖,谭蔚泓,郭栋才,李文生,官双燕,罗伟平,任艳群,尹双凤,夏新年,卢彦兵,熊远钦	湖南大学
160	地理信息类专业3332教学体系的创建与实践	杨昆,李满春,谢忠,潘玉君,陈振杰,冷天玖,王加胜,吴亮,朱彦辉,匡锦,孟超,罗毅,杨扬,洪亮,彭双云,王保云,陈占龙,赵波	云南师范大学,南京大学,中国地质大学（武汉）
161	现代工程能力导向的地质工科人才培养模式创新与实践	唐辉明,王亮清,熊承仁,胡新丽,章广成,吴琼,李长冬,葛云峰	中国地质大学（武汉）

13. 国家级教学成果奖二等奖，序 2，1997

国家级教学成果奖
获奖证书

获奖成果：《地理信息系统概论》课程的建设与改革

获奖者：黄杏元　李满春　徐寿成　谈俊忠　马劲松

获奖等级：二等奖

证书号：1997-2-168-2

中华人民共和国
国家教育委员会主任

一九九七年十月二十四日

14. 国家精品课程，序 1，2007

- Microsoft Internet Explorer

查看(V) 收藏(A) 工具(T) 帮助(H)

搜索 收藏夹

arch.jpkcnet.com/crsp/searchCourse.do?method=searchCourse

用户名： 密码： 登录 注册 系统错误请提交到crsp800@gmail.com

精品 课程 JPKCNET.COM

国家精品课程集成项目 首页 通知公告 精品课程 评价展示

首页 -> 精品课程列表

检索课程：GIS设计 检索字段：课程名称 所属省份：全部省份 检索

起止年度：2003年 至 2007年 课程级别：全部级别 课程层次：全部分类体系

课程列表

课程名称	所属学校	负责人	省份	获奖年份	课程级别	课程层次	一级学科	二级学科	连通状态	用户评价
GIS设计	南京大学	李满春	江苏省	2007	国家级	本科专业分类体系	理学	地理科学类	✔	评价

共 1 条记录 分为 1 页 目前第 1 页 首页 上一页 下一页 末页 每页 20 条记录

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制作单位：清华大学 国家CIMS工程技术研究中心

© 最后更新时间：2008-05-01 01:29:31

15. 国家精品在线开放课程，序 1，2017


国家精品在线开放课程

证书

★★★★★

课程名称：走进地理学

课程团队负责人：李满春

主要建设学校：南京大学

主要开课平台：爱课程（中国大学MOOC）

中华人民共和国教育部

2017年12月

证书编号：2017-1-0219

16. 国家精品教材，序 1，2011

中华人民共和国教育部

Ministry of Education of the People's Republic of China

关于公布2011年普通高等教育精品教材书目的通知

教高司函[2011]195号

各省、自治区、直辖市教育厅（教委），新疆生产建设兵团教育局，部属高等学校，有关出版社：

为进一步加强高等教育教材建设，更好地满足教学需求，促进普通高等教育“十一五”国家级规划教材（以下简称“规划教材”）质量的不断提高，2011年，我司对已出版的规划教材组织开展了最后一次普通高等教育精品教材（以下简称“精品教材”）评选工作。经出版社申报、专家评审，确定了276种教材为2011年精品教材。现将精品教材书目予以公布，请各省、自治区、直辖市教育厅（教委），新疆生产建设兵团教育局将此通知转发所辖高等学校，供高等学校选用教材时参考。

为鼓励入选精品教材的编写者对教材进一步修订、完善，不断提高教材质量，予以每种教材2200元补贴经费。请入选2011年精品教材的第一主编或第一作者所在高等学校将开户银行及账号于2011年11月30日前告知全国高等学校教学研究中心，联系人：张秀芹，联系电话：010-58581673，以便及时拨付补贴经费。

附件：2011年普通高等教育精品教材书目.xls

教育部高等教育司

二〇一一年十一月七日

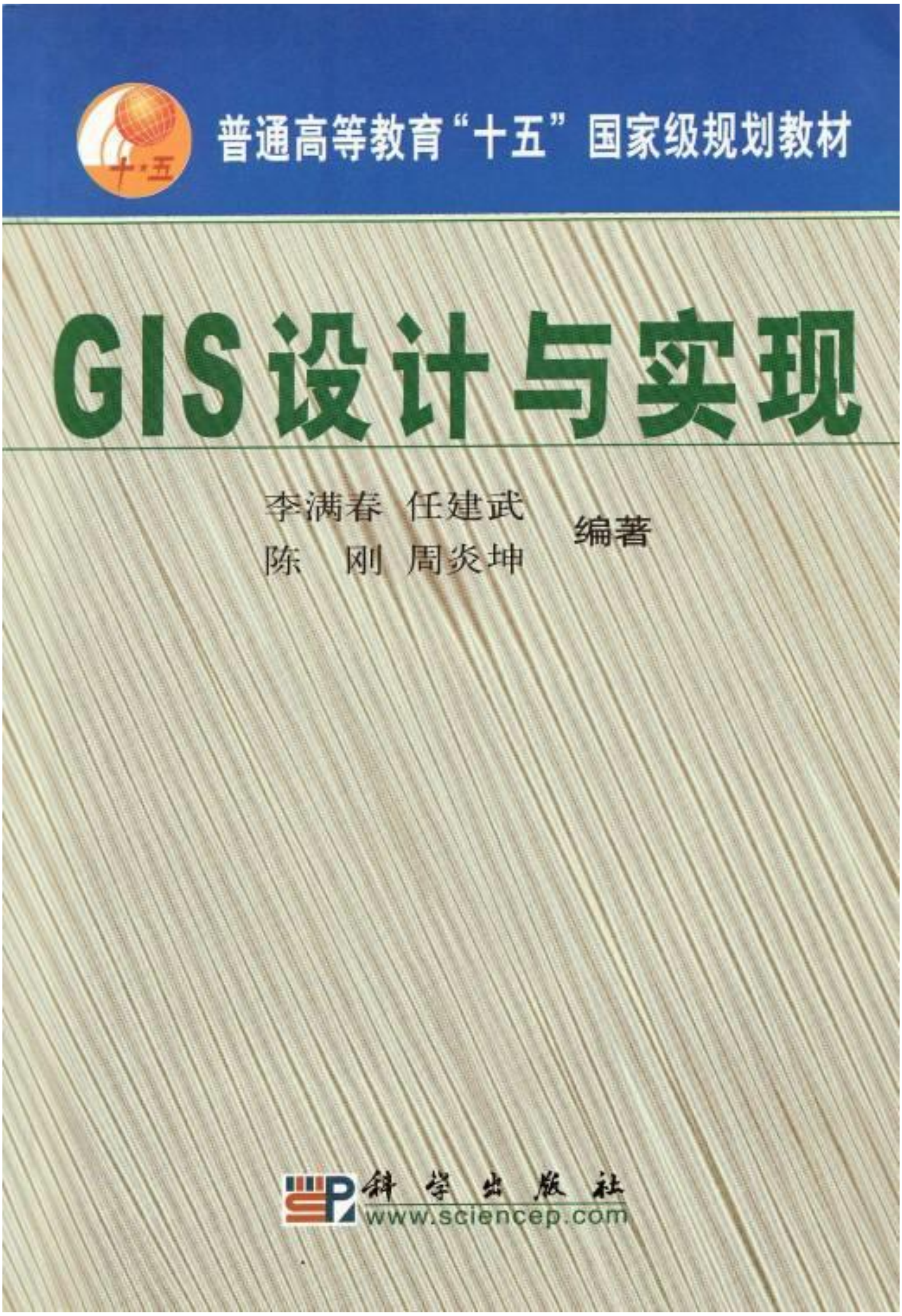
【打 印】 【关 闭】

附件：

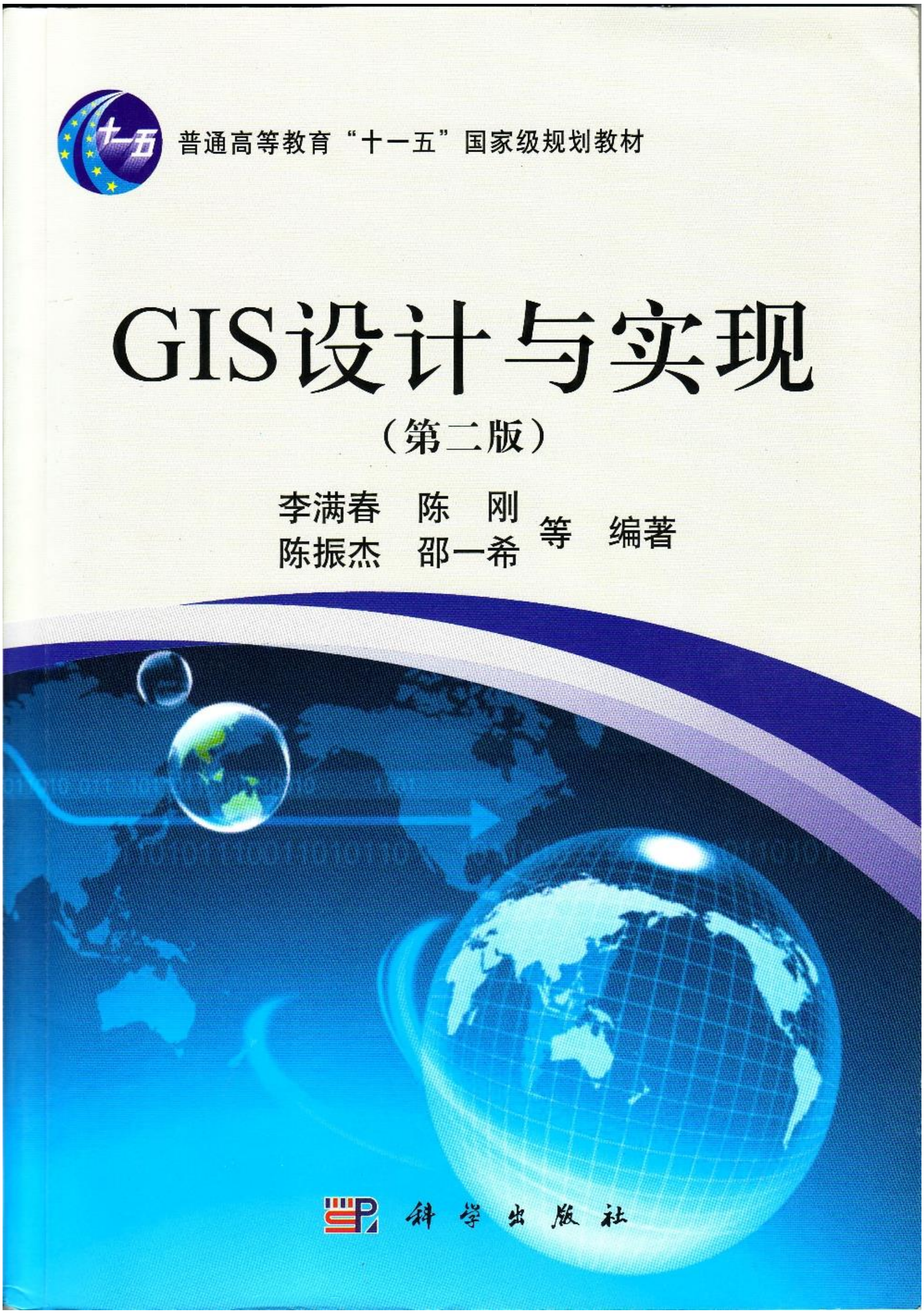
2011年普通高等教育精品教材书目

序号	教材名称	主编或作者	第一主编或作者单位	出版社
1	系统功能语言学概论（修订版）	胡壮麟、朱永生、张德禄、李战子	北京大学	北京大学出版社
2	新编英国文学选读（第三版）（上下）	罗经国	北京大学	北京大学出版社
3	泰语教程（第1-4册）（修订本）	潘德鼎	北京大学	北京大学出版社
4	俄国文学史(上卷)(修订版)	曹靖华、李明滨、岳凤麟、张秋华	北京大学	北京大学出版社
……				
145	信息检索（多媒体）教程（第二版）	沈固朝、储荷婷、华薇娜	南京大学	高等教育出版社
146	普通物理学教程 热学（第三版）	秦允豪	南京大学	高等教育出版社
147	GIS设计与实现（第二版）	李满春、陈刚等	南京大学	科学出版社
148	环境学(第2版)	左玉辉、华新、孙平、柏益尧、冯琳	南京大学	高等教育出版社

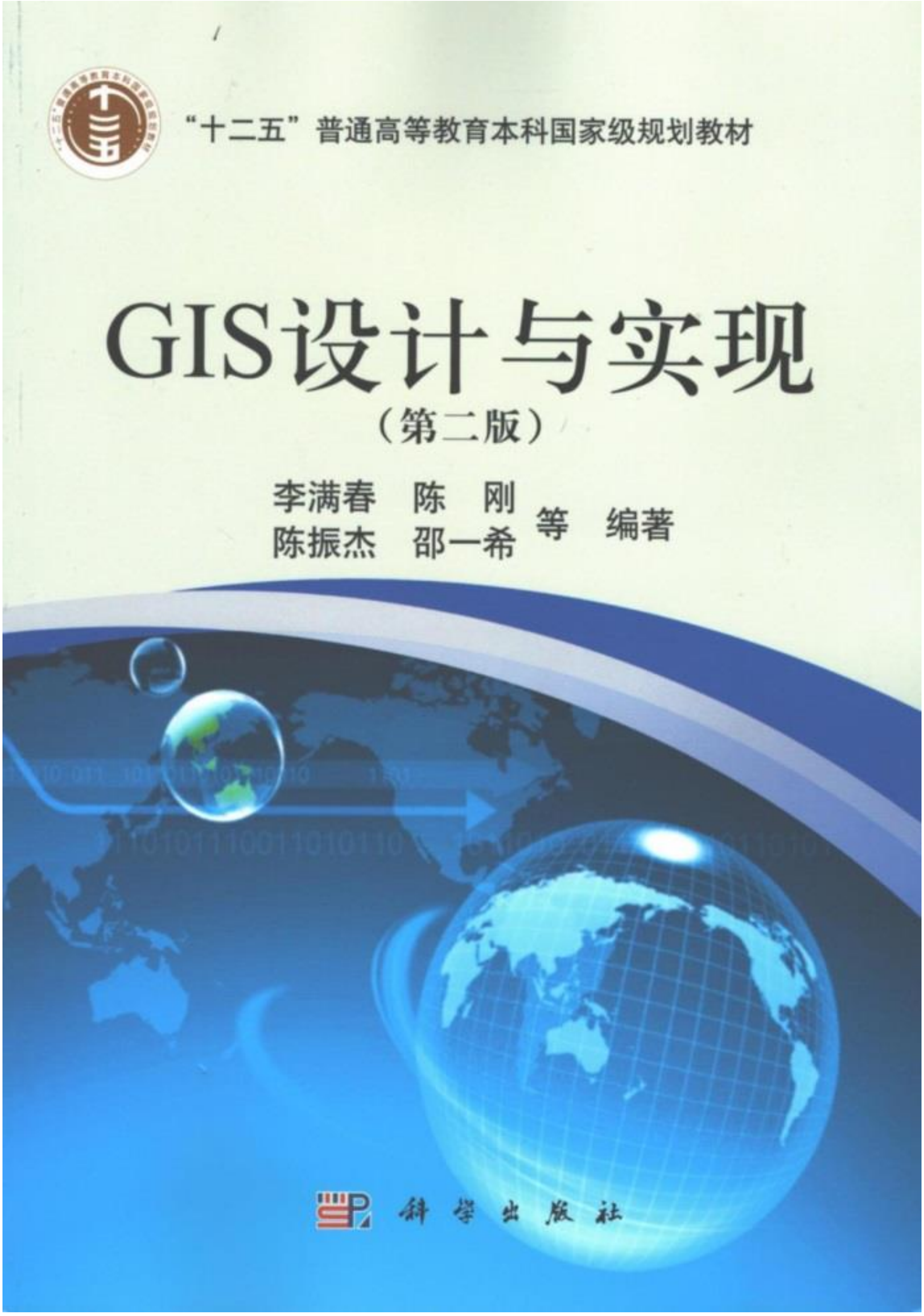
17. “十五”国家级规划教材，序 1，2003



18. “十一五”国家级规划教材，序 1，2006



19. “十二五”国家级规划教材，序 1，2014



20. 全国高校 GIS 教学成果奖特等奖，序 1，2017

全国高校GIS教学成果奖

获奖证书

获 奖 成 果：地理信息技术支持的地球系统科学虚拟仿真实验教学改革与创新

主要完成单位：南京大学

获 奖 者：李满春 陈振杰 徐士进 陈 刚 柯长青 程 亮 江 静 佘江峰 肖鹏峰 占文凤 陶先平 陆现彩 陈焱明 徐志伟 陈镜明

获 奖 等 级：特等奖

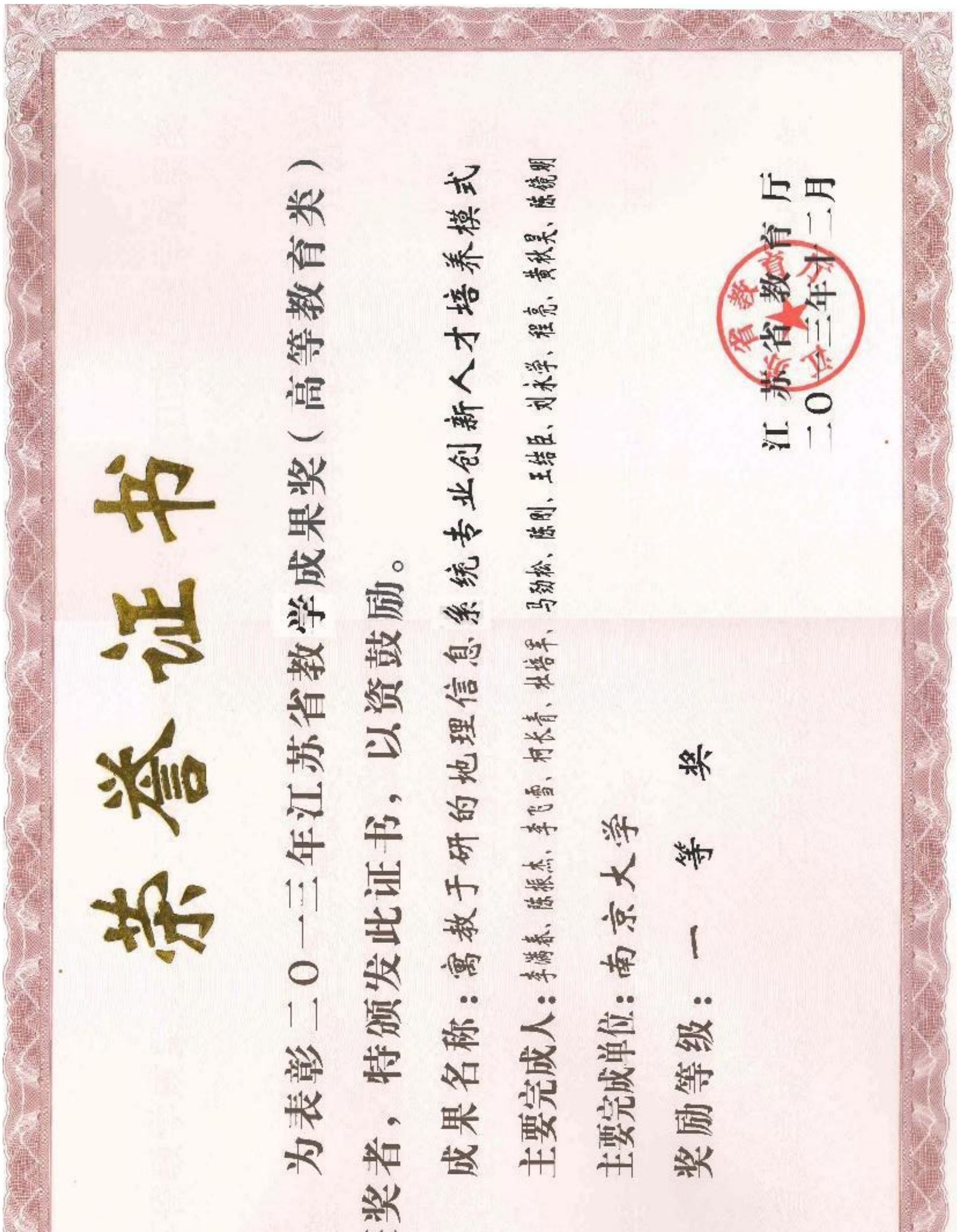
证 书 号：2017JX002-（13）

中国地理信息产业协会教育与科普工作委员会

教育部高等学校地理科学类专业教学指导委员会

二〇一七年八月

21．江苏省教学成果奖一等奖，序 1，2013



荣誉证书

为表彰二〇一三年江苏省教学成果奖（高等教育类）获奖者，特颁发此证书，以资鼓励。

成果名称：寓教于研的地理信息系统专业创新人才培养模式

主要完成人：李满春、陈振杰、李飞雪、柯长青、杜培军、马劲松、陈刚、王结臣、刘永学、程亮、黄秋昊、陈镜明

主要完成单位：南京大学

奖励等级：一　等　奖

江苏省教育厅

二〇一三年十二月

22. 江苏省教学成果奖一等奖，序 2，1997

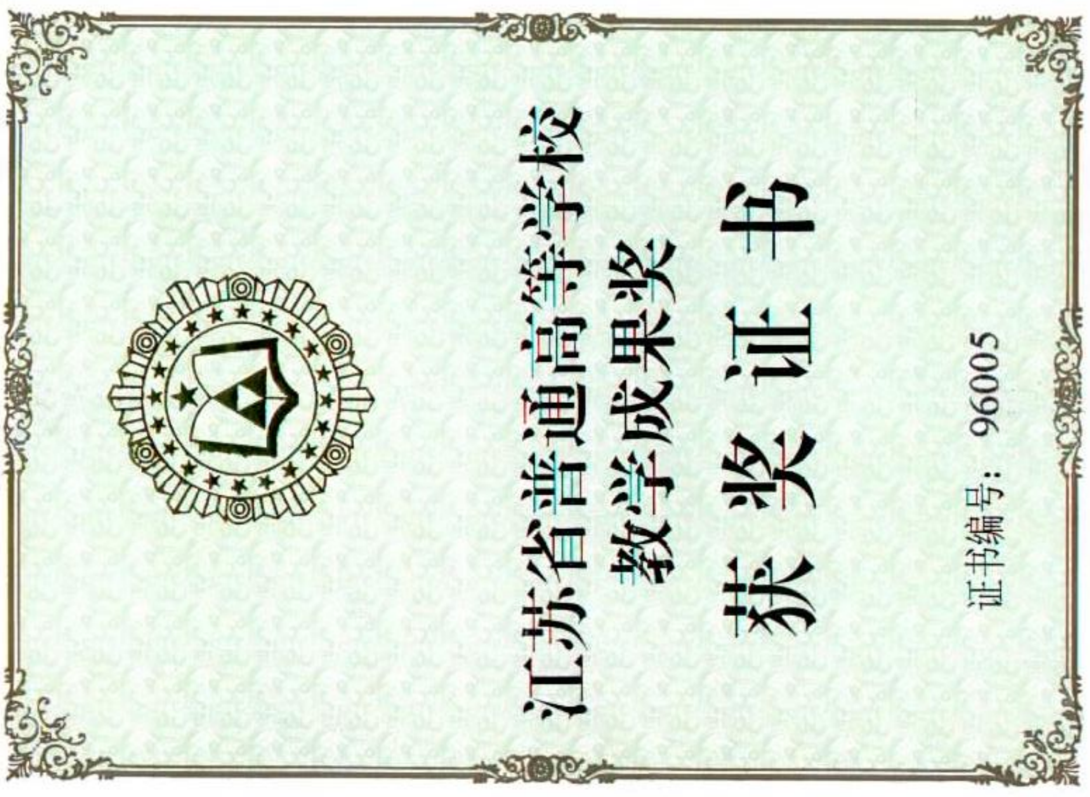

获奖成果：《地理信息系统概论》课程的建设与改革

获 奖 者：黄杏元 李满春 徐寿成 谈俊忠 马劲松

获奖等级：壹等

江苏省教育委员会

一九九七年三月


江苏省普通高等学校

教学成果奖

获奖证书

证书编号：96005

23. 江苏省高等学校一类精品课程，序 1，2006

江 苏 省 教 育 厅 文 件

苏教高［2006］13 号

省教育厅关于公布2006年江苏省高等学校
精品课程遴选结果的通知

附件一

2006 年江苏省高等学校一类精品课程名单

20	GIS 设计	南京大学	李满春	本科

24. 全国大学生“挑战杯”交叉创新一等奖（指导教师），2013


获奖证书

南京大学

钟礼山 李爽 谌颂 孙越凡 陈小雨 丁佳鹏 冯媛媛 曹鹏 杨育浩 许浩 同学：

你（们）的作品《掌上三维游：把真实景观世界搬进平板电脑》

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交叉创新一等奖

特发此证，以兹鼓励。

第十三届“挑战杯”全国大学生课外学术科技作品竞赛组委会

2013年10月

25. 中国大学 MOOC--爱课程（iCourse）年度优秀教师，序 1，2016

26. 国家教委科技进步奖三等奖，序 1，1996

为表彰在促进科学技术进步工作中做出重大贡献，特颁发此证书。

奖励日期：1996年5月

证书号：95-076

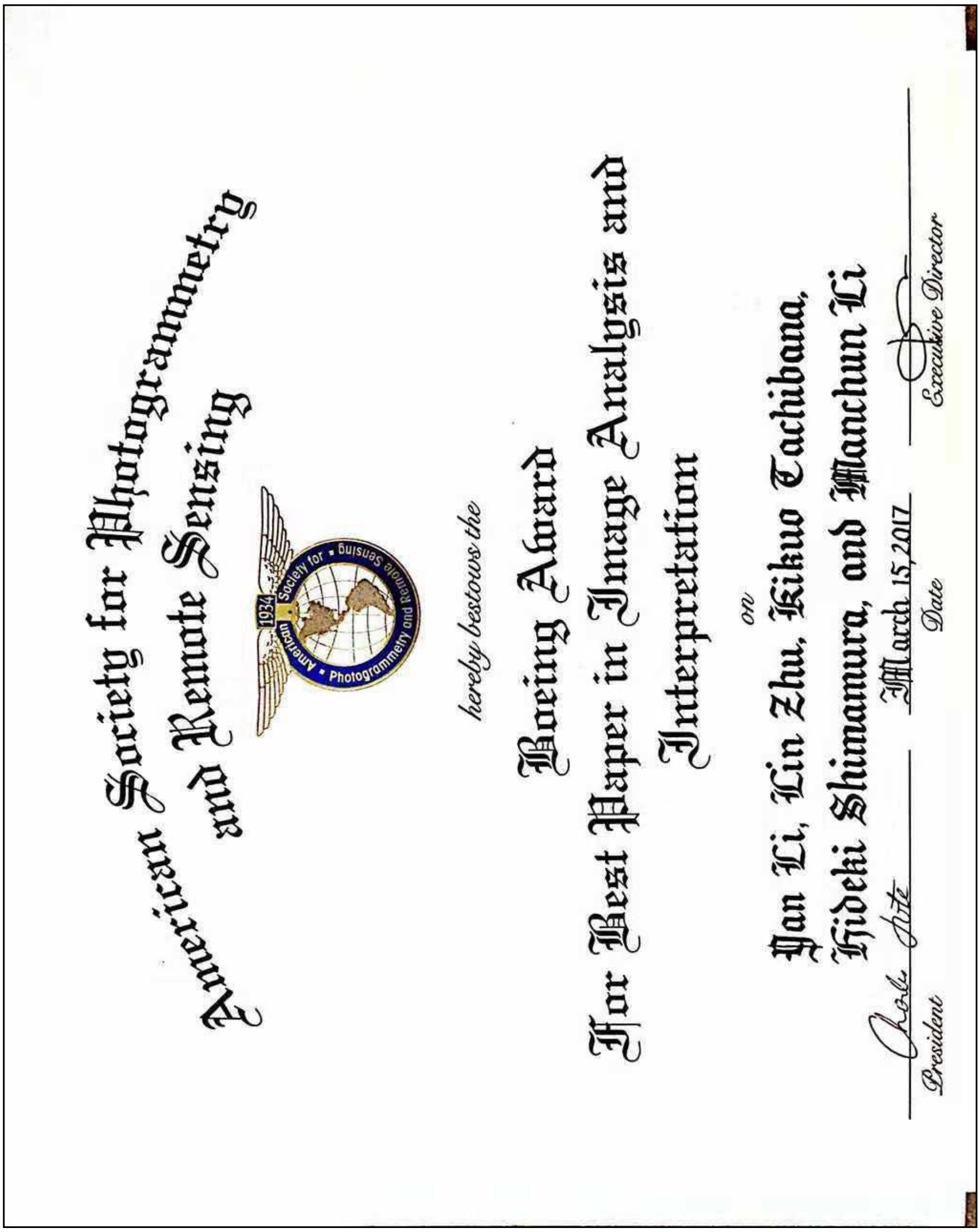
获奖项目：荆江防洪工程，河道变迁数据库的建立及应用研究

获奖者：李满春（第1完成人）

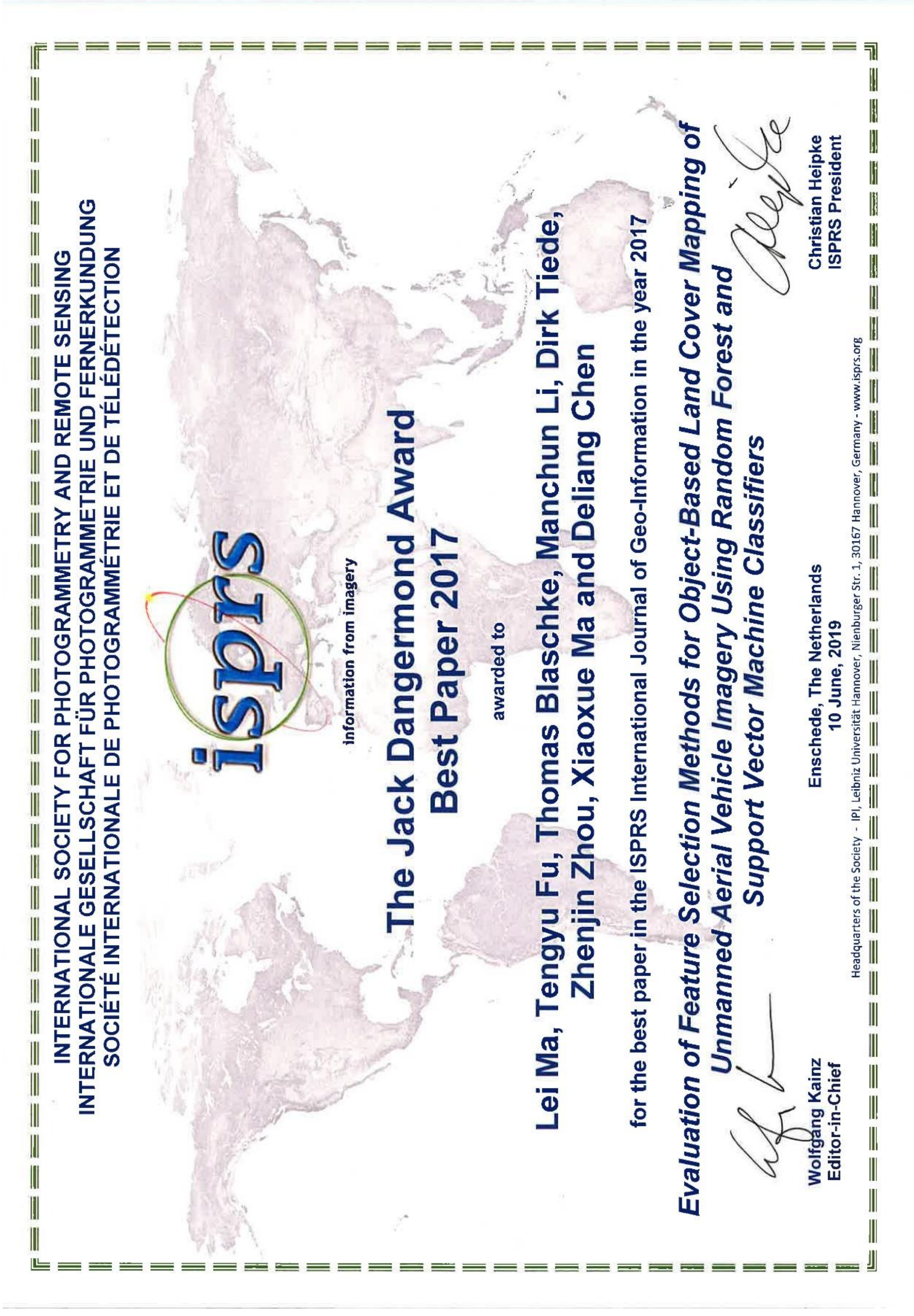
奖励等级：三等

国家教育委员会

27. 美国摄影测量与遥感学会最佳论文“波音奖”，序 5，2017



28. 国际摄影测量与遥感协会最佳论文奖，序 4，2019



INTERNATIONAL SOCIETY FOR PHOTOGRAMMETRY AND REMOTE SENSING
INTERNATIONALE GESELLSCHAFT FÜR PHOTOGRAMMETRIE UND FERNERKUNDUNG
SOCIÉTÉ INTERNATIONALE DE PHOTOGRAMMÉTRIE ET DE TÉLÉDÉTECTION

isprs
information from imagery

The Jack Dangermond Award
Best Paper 2017

awarded to

Lei Ma, Tengyu Fu, Thomas Blaschke, Manchun Li, Dirk Tiede,
Zhenjin Zhou, Xiaoxue Ma and Deliang Chen

for the best paper in the ISPRS International Journal of Geo-Information in the year 2017

Evaluation of Feature Selection Methods for Object-Based Land Cover Mapping of Unmanned Aerial Vehicle Imagery Using Random Forest and Support Vector Machine Classifiers

Wolfgang Kainz
Editor-in-Chief

Enschede, The Netherlands
10 June, 2019

Christian Heipke
ISPRS President

Headquarters of the Society - IPI, Leibniz Universität Hannover, Nienburger Str. 1, 30167 Hannover, Germany - www.isprs.org

29. 江苏省（省级）优秀博士论文奖（指导教师），2018

证　书

姜朋辉:

您的《耕地景观格局时空变化机理研究与空间管控设计》被评为2018年度江苏省优秀博士学位论文（指导老师: 李满春　程　亮）。

特发此证。

江苏省学位委员会

二〇一八年十二月十二日

30. 江苏省（省级）优秀博士论文奖（指导教师），2017

证 书

马 磊：

您的《面向对象高空间分辨率遥感影像分析不确定性研究》被评为2017年度江苏省优秀博士学位论文（指导老师：李满春）。

特发此证。

江苏省学位委员会　　江苏省教育厅

二〇一七年十月十二日

31. 江苏省（省级）优秀博士论文奖（指导教师），2016

证 书

杨 康:

您的《格陵兰冰盖表面融水存储、输送与释放遥感研究》被评为2016年度江苏省优秀博士学位论文（指导老师：李满春）。

特发此证。

江苏省学位委员会　江苏省教育厅

二〇一六年八月五日

32. 江苏省（省级）优秀硕士论文奖（指导教师），2017


证书

钟礼山：

您的《侧视LiDAR数据多层次单木点云分割研究》被评为2017年度江苏省优秀学术学位硕士学位论文（指导老师：李满春）

特发此证。

江苏省学位委员会 江苏省教育厅

二〇一七年十月十二日

33. 江苏省（省级）优秀硕士论文奖（指导教师），2011


证书

邵一希：

您的《基于地理加权回归的土地利用格局模拟研究》被评为2011年江苏省优秀硕士学位论文（指导教师：李满春）。

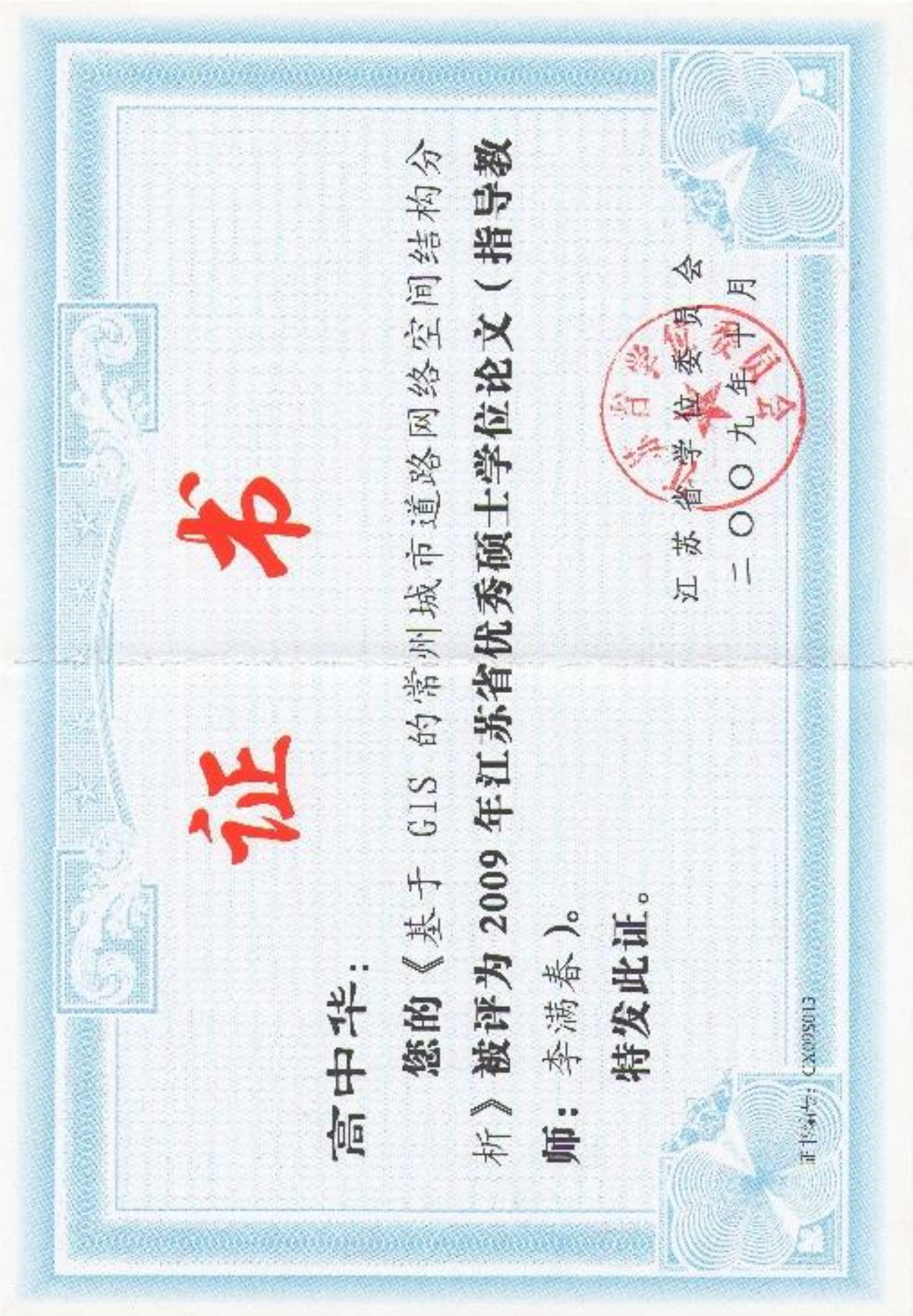
特发此证。

江苏省学位委员会

二〇一一年十一月

34. 江苏省（省级）优秀硕士论文奖（指导教师），2010

35. 江苏省（省级）优秀硕士论文奖（指导教师），2009


证书

高中华：

您的《基于 GIS 的常州城市道路网络空间结构分析》被评为 2009 年江苏省优秀硕士学位论文（指导教师：李满春）。

特发此证。

江苏省学位委员会

二〇〇九年十月

二、知识产权证明扫描件

申请人长期从事于地理信息科学技术与国土空间规划交叉创新研究，发展了以国土安全为核心、陆海统筹为特色的数字化空间规划理论方法技术体系，发表学术论文 300 余篇（SCI/SSCI 检索 108 篇、EI 检索 166 篇），授权国家发明专利 32 件，登记软件著作权 21 项。后附代表性学术论文 10 篇、国家发明专利 5 件、软件著作权 5 项，清单列表如下：

序号	论文名称	期刊名称	年份	排序
1	A systematic comparison of different object-based classification techniques using high spatial resolution imagery in agricultural environments	International Journal of Applied Earth Observation and Geoinformation (IF=4.846，高被引论文)	2016	一作
2	A review of supervised object-based land-cover image classification	ISPRS Journal of Photogrammetry and Remote Sensing (IF=6.942，高被引论文、热点论文)	2017	通作
3	Post-earthquake assessment of building damage degree using LiDAR data and imagery	Science in China Series E: Technological Sciences (IF=2.18)	2008	一作
4	Remotely sensed soil temperatures beneath snow-free skin-surface using thermal observations from tandem polar-orbiting satellites: An analytical three-time-scale model	Remote Sensing of Environment (IF=8.218)	2014	通作
5	Training set size, scale, and features in Geographic Object-Based Image Analysis of very high resolution unmanned aerial vehicle imagery	ISPRS Journal of Photogrammetry and Remote Sensing (IF=6.942)	2015	通作
6	Impacts of LUCC on soil properties in the riparian zones of desert oasis with remote sensing data: A case study of the middle Heihe River basin, China	Science of The Total Environment (IF=5.589)	2015	通作

7	Analysis of landscape fragmentation processes and driving forces in wetlands in arid areas: A case study of the middle reaches of the Heihe River, China	Ecological Indicators (IF=4.49)	2014	通作
8	Constructing Ecological Networks Based on Habitat Quality Assessment: A Case Study of Changzhou, China	Scientific Reports (IF=4.011)	2017	通作
9	Delineation of a permanent basic farmland protection area around a city centre: Case study of Changzhou City, China	Land Use Policy (IF=3.573)	2017	通作
10	Land system evolution of Qinghai-Tibetan Plateau under various development strategies	Applied Geography (IF=3.068)	2019	通作
序号	**国家发明专利名称**	**专利号**	**授权时间**	**排序**
1	基于区域聚类的遥感影像分割方法	ZL201010566893.8	2012/07/04	一作
2	基于 Landsat 数据源的珊瑚岛礁遥感信息自动提取方法	ZL201010567507.7	2012/11/21	一作
3	基于相似变换模型的栅格数据坐标转换并行方法	ZL201110441700.0	2014/04/09	一作
4	一种利用多时相雷达数据检测海上静止目标的方法	ZL201210275677.7	2013/08/28	一作
5	一种像素级 SAR 影像时间序列构建的局部自适应配准方法	ZL201310172271.0	2015/11/18	一作
序号	**软件著作权名称**	**登记号**	**发表时间**	**排序**
1	海岸海洋环境与资源遥感监测与评价分析系统软件	2011SR012682	2010/12/01	一作
2	南京大学校园实景导航软件	2013SR054635	2012/12/31	一作
3	南海及其邻域历史地理情势分析系统	2013SR122710	2013/08/31	一作
4	遥感影像时间序列信息提取系统	2014SR205453	2014/10/23	一作
5	市域尺度国土空间利用质量评价软件	2017SR528908	2016/12/06	一作

1.　代表性学术论文

1.1. A systematic comparison of different object-based classification techniques using high spatial resolution imagery in agricultural environments. 2016，*International Journal of Applied Earth Observation and Geoinformation*. 高被引论文

International Journal of Applied Earth Observation and Geoinformation 49 (2016) 87–98

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International Journal of Applied Earth Observation and Geoinformation

journal homepage: www.elsevier.com/locate/jag

A systematic comparison of different object-based classification techniques using high spatial resolution imagery in agricultural environments

Manchun Li[a], Lei Ma[a,b,*], Thomas Blaschke[b], Liang Cheng[a], Dirk Tiede[b]

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ABSTRACT

Geographic Object-Based Image Analysis (GEOBIA) is becoming more prevalent in remote sensing classification, especially for high-resolution imagery. Many supervised classification approaches are applied to objects rather than pixels, and several studies have been conducted to evaluate the performance of such supervised classification techniques in GEOBIA. However, these studies did not systematically investigate all relevant factors affecting the classification (segmentation scale, training set size, feature selection and mixed objects). In this study, statistical methods and visual inspection were used to compare these factors systematically in two agricultural case studies in China. The results indicate that Random Forest (RF) and Support Vector Machines (SVM) are highly suitable for GEOBIA classifications in agricultural areas and confirm the expected general tendency, namely that the overall accuracies decline with increasing segmentation scale. All other investigated methods except for RF and SVM are more prone to obtain a lower accuracy due to the broken objects at fine scales. In contrast to some previous studies, the RF classifiers yielded the best results and the k-nearest neighbor classifier were the worst results, in most cases. Likewise, the RF and Decision Tree classifiers are the most robust with or without feature selection. The results of training sample analyses indicated that the RF and adaboost. M1 possess a superior generalization capability, except when dealing with small training sample sizes. Furthermore, the classification accuracies were directly related to the homogeneity/heterogeneity of the segmented objects for all classifiers. Finally, it was suggested that RF should be considered in most cases for agricultural mapping.

1. Introduction

Recent advances in the airborne and spaceborne remote sensing technology and image segmentation techniques offer new opportunities for remote sensing agricultural mapping (Wulder and Coops, 2014; Ma et al., 2014; Zhang et al., 2015), whilst the OBIA/GEOBIA ((Geographic) Object-based Image Analysis) paradigm in the field of remote sensing classification is already widely accepted (Liu et al., 2006; Blaschke et al., 2014). Plenty of classification approaches are documented within the GEOBIA framework, especially the implementation of expert rule-sets, which make use of the extremely extended feature space spanned by the use of the available object-specific features at several segmentation scales (context features/neighborhood relation, scaled-hierarchy relations, form features etc.) (Benz et al., 2004; Blaschke, 2010; Tiede et al., 2010; Strasser and Lang, 2015). Nevertheless, supervised classification algorithms based on objects rather than pixels as classification units are still very important. According to previous studies, the comparison of classification approaches within a GEOBIA framework can be divided into two general topics: 1) a comparison of GEOBIA and traditional per-pixel image analysis; and 2) a comparison of different classification techniques within GEOBIA only. Although there is general agreement regarding the former (Yan et al., 2006; Duro et al., 2012), the selection of a suitable classifier is still a problem for any per-pixel and GEOBIA method due to the diversity of data sources, the training set size and feature and, especially, the selection of segmentation parameters (e.g. scale/size of objects) and spectrally mixed objects bringing some uncertainty into the comparison of methods (Yu et al., 2008). In the following sub-section we

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1.2. A review of supervised object-based land-cover image classification. 2017，*ISPRS Journal of Photogrammetry and Remote Sensing*. 高被引与热点论文

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A review of supervised object-based land-cover image classification

Lei Ma [a,b,c,*], Manchun Li [a,b,c,*], Xiaoxue Ma [c,d], Liang Cheng [a,b,c], Peijun Du [a,b,c], Yongxue Liu [a,b,c]

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Review

A B S T R A C T

Object-based image classification for land-cover mapping purposes using remote-sensing imagery has attracted significant attention in recent years. Numerous studies conducted over the past decade have investigated a broad array of sensors, feature selection, classifiers, and other factors of interest. However, these research results have not yet been synthesized to provide coherent guidance on the effect of different supervised object-based land-cover classification processes. In this study, we first construct a database with 28 fields using qualitative and quantitative information extracted from 254 experimental cases described in 173 scientific papers. Second, the results of the meta-analysis are reported, including general characteristics of the studies (e.g., the geographic range of relevant institutes, preferred journals) and the relationships between factors of interest (e.g., spatial resolution and study area or optimal segmentation scale, accuracy and number of targeted classes), especially with respect to the classification accuracy of different sensors, segmentation scale, training set size, supervised classifiers, and land-cover types. Third, useful data on supervised object-based image classification are determined from the meta-analysis. For example, we find that supervised object-based classification is currently experiencing rapid advances, while development of the fuzzy technique is limited in the object-based framework. Furthermore, spatial resolution correlates with the optimal segmentation scale and study area, and Random Forest (RF) shows the best performance in object-based classification. The area-based accuracy assessment method can obtain stable classification performance, and indicates a strong correlation between accuracy and training set size, while the accuracy of the point-based method is likely to be unstable due to mixed objects. In addition, the overall accuracy benefits from higher spatial resolution images (e.g., unmanned aerial vehicle) or agricultural sites where it also correlates with the number of targeted classes. More than 95.6% of studies involve an area less than 300 ha, and the spatial resolution of images is predominantly between 0 and 2 m. Furthermore, we identify some methods that may advance supervised object-based image classification. For example, deep learning and type-2 fuzzy techniques may further improve classification accuracy. Lastly, scientists are strongly encouraged to report results of uncertainty studies to further explore the effects of varied factors on supervised object-based image classification.

Contents

1. Introduction 278
2. Methods 279
   2.1. Data collection 279
   2.2. Data 279
   2.3. Data analysis 280
3. Results and discussion 280

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E-mail addresses: maleinju@gmail.com (L. Ma), limanchunnju@163.com (M. Li).

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1.3. Post-earthquake assessment of building damage degree using LiDAR data and imagery. 2008, *Science in China Series E-Technological Sciences*.

Science in China Series E: Technological Sciences

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tech.scichina.com
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Post-earthquake assessment of building damage degree using LiDAR data and imagery

LI ManChun[1], CHENG Liang[1,2†], GONG JianYa[2], LIU YongXue[1], CHEN ZhenJie[1], LI FeiXue[1], CHEN Gang[1], CHEN Dong[1] & SONG XiaoGang[3]

[1] Department of Geographic Information Science, Nanjing University, Nanjing 210093, China;
[2] State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan 430079, China;
[3] State Key Laboratory of Earthquake Dynamics, Institute of Geology, China Earthquake Administration, Beijing 100029, China

Various methods have been developed to detect and assess building's damages due to earthquakes using remotely sensed data. After the launch of the high resolution sensors such as IKONOS and QuickBird, it becomes realistic to identify damages on the scale of individual building. However the low accuracy of the results has often led to the use of visual interpretation techniques. Moreover, it is very difficult to estimate the degree of building damage (e.g. slight damage, moderate damage, or severe damage) in detail using the existing methods. Therefore, a novel approach integrating LiDAR data and high resolution optical imagery is proposed for evaluating building damage degree quantitatively. The approach consists of two steps: 3D building model reconstruction and rooftop patch-oriented 3D change detection. Firstly, a method is proposed for automatically reconstructing 3D building models with precise geometric position and fine details, using pre-earthquake LiDAR data and high resolution imagery. Secondly, focusing on each rooftop patch of the 3D building models, the pre- and post-earthquake LiDAR points belonging to the patch are collected and compared to detect whether it was destroyed or not, and then the degree of building damage can be identified based on the ratio of the destroyed rooftop patches to all rooftop patches. The novelty of the proposed approach is to detect damages on the scale of building's rooftop patch and realize quantitative estimation of building damage degree.

post-earthquake assessment, building damage degree, rooftop patch, LiDAR, imagery

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†Corresponding author (email: lcheng.geo@gmail.com)
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1.4. Remotely sensed soil temperatures beneath snow-free skin-surface using thermal observations from tandem polar-orbiting satellites: An analytical three-time-scale model. 2014，*Remote Sensing of Environment.*

Remote Sensing of Environment 143 (2014) 1–14

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Remotely sensed soil temperatures beneath snow-free skin-surface using thermal observations from tandem polar-orbiting satellites: An analytical three-time-scale model

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A B S T R A C T

Subsurface soil temperature is a key variable of land surface processes and not only responds to but also modulates the interactions of energy fluxes at the Earth's surface. Thermal remote sensing has traditionally been regarded as incapable of detecting the soil temperature beneath the skin-surface. This study shows that thermal remote sensing can be used to estimate soil temperatures. Our results provide insights into thermal observations collected with tandem polar-orbiting satellites when used toward obtaining soil temperatures under clear-sky conditions without the use of any ground-based information or field-measured soil properties.
We designed an analytical three-time-scale (3-scale, for short) model, dividing the annual cycle of soil temperatures into three subcycles: the annual temperature cycle (ATC), which represents the daily-averaged temperature; the diurnal temperature cycle (DTC), which represents the instantaneous temperature; and the weather-change temperature cycle (WTC), which is divided into two parts to represent both the daily-averaged (WTC_{avg}) and the instantaneous temperature (WTC_{inst}). The DTC and WTC_{inst} were further parameterized into four undetermined variables, including the daily-averaged temperature, thermal inertia, upward surface flux factor, and day-to-day change rate. Thus, under clear-sky conditions, the four thermal measurements in a diurnal cycle recorded with tandem polar-orbiting satellites are sufficient for reconstructing the DTC of both land surface and soil temperatures. Polar-orbiting satellite data from MODIS are used to show the model's capability. The results demonstrate that soil temperatures with a spatial resolution of 1 km under snow-free conditions can be generated at any time of a clear-sky day. Validation is performed by using a comparison between the MODIS-inverted and ground-based soil temperatures. The comparison shows that the accuracy of inverted soil temperatures lies between 0.3 and 2.5 K with an average of approximately 1.5 K. These results open a new frontier in the application of thermal remote sensing wherein soil temperatures with high spatial and temporal resolutions can be remotely estimated.

1. Introduction

When the sun radiates energy onto a location on Earth, a portion of the absorbed solar radiation at the Earth's surface is conducted downward, changing the subsurface soil temperatures periodically at multiple temporal scales. Soil temperature within the shallow layers is an important variable for biophysicochemical soil processes, such as microbial activity, evaporation, aeration, seed germination, and root development (Hillel, 1998). Soil temperature from a relatively deep layer can be used to model land surface processes (Best, Cox, & Warrilow, 2005), to monitor subsurface urban heat islands and subsurface geothermal systems (Ferguson & Woodbury, 2007), and to optimally design underground pipes (Dalla Rosa, Li, & Svendsen, 2011).

Soil temperature can be obtained from both observations and models. Observed soil temperatures are usually measured by thermometers installed within the soil near the surface (e.g., the Soil Climate Analysis Network sites). These measurements are characterized by high accuracy, as well as high cost, but low representativeness over extensive and heterogeneous areas. Modeling has the advantage of providing the soil temperature at any depth and time. However, this

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1.5. Training set size, scale, and features in Geographic Object-Based Image Analysis of very high resolution unmanned aerial vehicle imagery. 2015，*ISPRS journal of photogrammetry and remote sensing.*

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Training set size, scale, and features in Geographic Object-Based Image Analysis of very high resolution unmanned aerial vehicle imagery

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ABSTRACT

Unmanned Aerial Vehicle (UAV) has been used increasingly for natural resource applications in recent years due to their greater availability and the miniaturization of sensors. In addition, Geographic Object-Based Image Analysis (GEOBIA) has received more attention as a novel paradigm for remote sensing earth observation data. However, GEOBIA generates some new problems compared with pixel-based methods. In this study, we developed a strategy for the semi-automatic optimization of object-based classification, which involves an area-based accuracy assessment that analyzes the relationship between scale and the training set size. We found that the Overall Accuracy (OA) increased as the training set ratio (proportion of the segmented objects used for training) increased when the Segmentation Scale Parameter (SSP) was fixed. The OA increased more slowly as the training set ratio became larger and a similar rule was obtained according to the pixel-based image analysis. The OA decreased as the SSP increased when the training set ratio was fixed. Consequently, the SSP should not be too large during classification using a small training set ratio. By contrast, a large training set ratio is required if classification is performed using a high SSP. In addition, we suggest that the optimal SSP for each class has a high positive correlation with the mean area obtained by manual interpretation, which can be summarized by a linear correlation equation. We expect that these results will be applicable to UAV imagery classification to determine the optimal SSP for each class.

1. Introduction

Geographic Object-Based Image Analysis (GEOBIA) is a systematic framework for geographic object identification, which combines pixels with the same semantic information into an object, thereby generating an integrated geographic object, before recognizing the geographic object using GIS spatial analysis or a mature classification algorithm, i.e., Neural Networks (NN), Maximum Likelihood (ML), Support Vector Machines (SVM), and Random Forests (RF). GEOBIA is also a new and evolving paradigm, which was designed specifically for high resolution remote sensing image data, in contrast to the pixel-based approach (Benz et al., 2004; Liu et al., 2006; Blaschke, 2010; Myint et al., 2011; Addink et al., 2012; Blaschke et al., 2014). Indeed, GEOBIA has become a popular alternative for land cover and land use classification (Radoux and Bogaert, 2014). Since the first international GEOBIA conference in Calgary, Canada, the unique advantages of GEOBIA have attracted the attention of scholars throughout the global field of remote sensing (Hay and Castilla, 2008; Powers et al., 2012; Arvor et al., 2013; Costa et al., 2014; Blaschke et al., 2014). GEOBIA has many advantages as a new paradigm in the diverse fields of remote sensing because it is readily combined with GIS to provide a complete vector map of land use types, which can be used directly for GIS analysis (Arvor et al., 2013). However, the pixels that belong to the same object cannot be combined into one complete object accurately due to the uncertainty of segmentation, which is a process used to partition a complex image scene into non-overlapping homogeneous regions (Witharana and Civco, 2014). This is because over-segmentation and under-segmentation

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1.6. Impacts of LUCC on soil properties in the riparian zones of desert oasis with remote sensing data: A case study of the middle Heihe River basin, China. 2015, *Science of The Total Environment.*

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Impacts of LUCC on soil properties in the riparian zones of desert oasis with remote sensing data: A case study of the middle Heihe River basin, China

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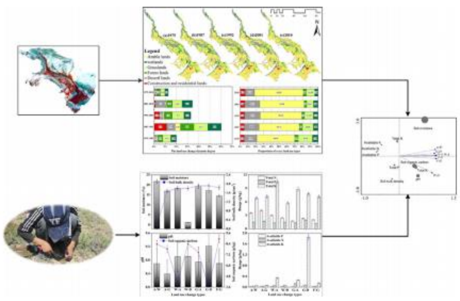
HIGHLIGHTS

- We analyzed the impacts of LUCC on soil properties in the riparian area zones of desert oasis.
- The combination of soil experiment with RS images in a long time scale
- Soil moisture and soil organic carbon can be explained by LUCC well.
- Soil nutrients have no significant correlation with LUCC.

GRAPHICAL ABSTRACT



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ABSTRACT

Large-scale changes in land use and land cover over long timescales can induce significant variations in soil physicochemical properties, particularly in the riparian zones of arid regions. Frequent reclamation of wetlands and grasslands and intensive agricultural activity have induced significant changes in both land use/cover and soil physicochemical properties in the riparian zones of the middle Heihe River basin of China. The present study aims to explore whether land use/land cover change (LUCC) can well explain the variations in soil properties in the riparian zones of the middle Heihe River basin. To achieve this, we mapped LUCC and quantified the type of land use change using remote sensing images, topographic maps, and GIS analysis techniques. Forty-two sites were selected for soil and vegetation sampling. Then, physical and chemical experiments were employed to determine soil moisture, soil bulk density, soil pH, soil organic carbon, total nitrogen, total potassium, total phosphorous, available nitrogen, available potassium, and available phosphorous. The Independent-Samples Kruskal–Wallis Test, principal component analysis, and a scatter matrix were used to analyze the effects of LUCC on soil properties. The results indicate that the majority of the parameters investigated were affected significantly by LUCC. In particular, soil moisture and soil organic carbon can be explained well by land cover change

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1.7. Analysis of landscape fragmentation processes and driving forces in wetlands in arid areas: A case study of the middle reaches of the Heihe River, China. 2014, *Ecological Indicators*.

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Analysis of landscape fragmentation processes and driving forces in wetlands in arid areas: A case study of the middle reaches of the Heihe River, China

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ABSTRACT

Landscape fragmentation in wetlands usually implies degradation of its ecological functions. Landscape fragmentation divides wetlands into isolated islands, which disturbs the energy flow and nutrient cycling within the wetland. Research into the development and causes of landscape fragmentation in wetlands is urgently needed for effective monitoring and protection of wetlands. We use a combination of techniques including remote sensing, a landscape index model, and redundancy analysis to analyze landscape fragmentation and its driving forces in the middle reaches of the Heihe River from both temporal and spatial perspectives. A new mathematic morphological method that enhances the credibility of landscape fragmentation analysis without changing the original pixel size of the interpreted data is proposed for the calculation of landscape indices. The combination of this new mathematic morphological method and traditional landscape pattern indices enhances the evaluation strategy for landscape fragmentation. Our results demonstrate that the fragmentation processes that affect the wetland landscape of the study area are primarily represented as the shrinking of core wetland area and decrease in mean size of wetland patches. Our results also show an increase in the fragmentation index (*FS*) of the landscape in recent decades. The impacts of natural factors on wetland landscape fragmentation processes are typically reflected in changes in climate and hydrology. In the study area, temperature, which is more important than precipitation in driving wetland landscape fragmentation processes, cannot be omitted. In addition, our analysis proves that unnecessary human activity is a major threat for sustainable development and maintenance of wetlands.

1. Introduction

Wetlands are unique ecosystems formed as a result of interactions between the forces affecting land and water (Zhang et al., 2010). As key parts of the global ecological system and carbon pool, wetlands offer important ecological functions and effects that cannot be replaced: they mitigate pollution, provide habitats for wildlife, regulate climate, and preserve biodiversity, among other things (Mander and Mitsch, 2009, Copeland et al., 2010; Sulman et al., 2013). However, the Organization of Economic Cooperation and Development has estimated that approximately 50% of global wetlands could have been lost since 1900, with the remainder experiencing increased fragmentation in recent years (Lienert et al., 2002; Erwin, 2008; Khaznadar et al., 2009; Zhang et al., 2010; Wang et al., 2011). Similarly, incomplete statistics suggest that two thirds of wetlands in France were lost during 1900–1993 (Westerberg et al., 2010). In general, climatic change accompanied by increased disturbance caused by human activity has placed wetlands at greater risk, particularly in arid zones (Zhao et al., 2009). Wetlands in arid zones are key nodes and represent critical areas in the landscape patterning that is crucial to the functioning of arid environments; they also play a key role in providing water, energy, and other resources to sustain human life (Zhou, 2005;

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Constructing Ecological Networks Based on Habitat Quality Assessment: A Case Study of Changzhou, China

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Fragmentation and reduced continuity of habitat patches threaten the environment and biodiversity. Recently, ecological networks are increasingly attracting the attention of researchers as they provide fundamental frameworks for environmental protection. This study suggests a set of procedures to construct an ecological network. First, we proposed a method to construct a landscape resistance surface based on the assessment of habitat quality. Second, to analyze the effect of the resistance surface on corridor simulations, we used three methods to construct resistance surfaces: (1) the method proposed in this paper, (2) the entropy coefficient method, and (3) the expert scoring method. Then, we integrated habitat patches and resistance surfaces to identify potential corridors using graph theory. These procedures were tested in Changzhou, China. Comparing the outputs of using different resistance surfaces demonstrated that: (1) different landscape resistance surfaces contribute to how corridors are identified, but only slightly affect the assessment of the importance of habitat patches and potential corridors; (2) the resistance surface, which is constructed based on habitat quality, is more applicable to corridor simulations; and (3) the assessment of the importance of habitat patches is fundamental for ecological network optimization in the conservation of critical habitat patches and corridors.

Ecosystems support life on Earth, and thus play a vital role in human well-being, either directly or indirectly[1]. In recent years, anthropogenic activity has facilitated the invasion of ecosystems by nonnative species and natural hazards, leading to the worsening of various environmental problems, including the degeneration of ecosystem services and a sharp decline in biodiversity[1,2]. Low continuity between habitat patches caused by the fragmentation of ecological landscapes (i.e., natural or semi-natural habitats) represents the greatest threat to biodiversity conservation[3–5]. However, growing environmental awareness and an improved understanding of how human communities interact with their environment have led to growing concerns about enhancing habitat patch continuity within ecosystems[6,7]. Nevertheless, recent studies show that economic growth has actually made humans more dependent on ecosystem services and biodiversity[8]. Therefore, it is particularly important to maximize ecosystem service values by constructing networks that enhance the functionality of urban ecosystem services[9,10].

Research on ecological network construction has been widely carried out on a global scale[11,12]. The ecological network is a representation of the biotic interactions in an ecosystem, in which ecological corridors link protected habitat patches[13]. A habitat patch is a set of landscape patches, while a landscape patch is the basic unit—a relatively homogenous mosaic of familiar land-use types that differ from the surrounding background—that formulates landscape patterns. Previous studies have suggested that habitat patches are areas where organisms aggregate, representing stepping stones for migration[14,15], while ecological corridors are narrow bands of vegetation that promote biological migration between the two habitat patches, allowing wild animals to survive[16]. These two landscape types form the core of ecological networks. However, one of the main limitations of studies on ecological newtorks is that the movement data of target speices are frequently unavailable. Therefore, there have

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1.9. Delineation of a permanent basic farmland protection area around a city centre: Case study of Changzhou City, China. 2017, *Land Use Policy*.

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Delineation of a permanent basic farmland protection area around a city centre: Case study of Changzhou City, China

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ABSTRACT

The delineation of permanent basic farmland will safeguard the production baseline of China's agricultural development by securing easily appropriated, high-quality farmland surrounding urban areas, thereby strictly controlling the use of farmland (especially high-quality farmland surrounding urban areas) facing accelerated urban expansion. This study researched the delineation of permanent basic farmland in a typical region undergoing rapid urbanization. By constructing a systematic classification model, farmland was classified into matrix, edge, and island farmlands in order to analyze farmland contiguity and fragmentation. Based on the indicator requirements of various plans related to farmland, an evaluation indicator system was constructed in order to develop an evaluation model for comprehensive farmland productivity. From the perspective of farmland spatial contiguity and highly efficient productivity, a delineation model for permanent basic farmland was proposed to delimit the permanent protection and utilization boundaries for high-quality farmland around urban areas. The results show the following: (1) matrix and edge farmlands can intuitively display farmland contiguity characteristics; (2) comprehensive farmland productivity was closely related to farmland spatial patterns, supporting infrastructure, and policy management and protection; and (3) there was a high degree of spatial overlap between contiguous and highly productive farmland. The model took both comprehensive farmland productivity and spatial clustering into consideration in order to delineate permanent basic farmland, which is a beneficial factor in protecting farmland quality and safeguarding sustainable farmland utilization. It can also be used as a control line to limit urban sprawl, guide urban cluster development, and improve economical and intensive urban land use.

1. Introduction

Farmland serves to protect human food security. It is also the foundation for industrial development and social stability and is a key factor in regional food and ecological security (Lambin et al., 2013; Cheng et al., 2015a; Ministry of Agriculture et al., 2015). With socio-economic developments in recent years, there has been a sharp decrease in the scale of farmland in certain areas and increasing pressure on the global food supply due to a gradually expanding population (Foley et al., 2005, 2011). The food security issue is especially prominent in China, which contains 7% of the world's farmland and feeds 22% of the global population (Ding, 2004). As the world's most populous country, there is no doubt that a reduction in farmland threatens China's food security (Liu et al., 2005).

China and several other developing countries are facing the issue of increased food demand and limited production growth (Fader et al., 2013; Cristina Rulli and D'Odorico, 2014). To this end, the Chinese government has invested significant financial and human resources in order to develop modern agriculture and promote its sustainable development (Ministry of Agriculture et al., 2015). Currently, however, China's basic conditions can be characterized by a large population, a scarcity of land, and a shortage

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Land system evolution of Qinghai-Tibetan Plateau under various development strategies

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ABSTRACT

Land use and land cover (LULC) is one of the most representative criteria used to evaluate the global environment and terrestrial ecosystem change. LULC plays an important role in the ecological and environmental protection of the Qinghai-Tibetan Plateau (QTP), which is a unique geographical location. The LULC of the QTP has undergone drastic changes during the past few decades due to local planning and policy implementation. Projects such as reforestation and grassland restoration are exerting pressure on land resources and may affect future land use patterns considerably. Current assessments of future land use changes rarely focus on the multiple demands for commodities and services. This study employed the CLUMondo model to predict future land use change trajectories for the period 2010–2030 under three different scenarios. The results indicate that land system changes varied notably under different land management strategies and exhibited large locational discrepancies. Moreover, future land system changes are mainly demonstrated in the form of management intensification under all three scenarios. High demand for livestock in the TREND scenario leads to grassland expansion as well, resulting in corresponding increase in the grassland cover density. Additionally, the expansion of forest area under the FOREST scenario suggests that caution should be exercised during afforestation in the QTP. The results of this study can guide and support future land-use planning, management, and policy formulation in the QTP.

1. Introduction

Human activities have significantly influenced the Earth's surface to satisfy societal demand for food and living space, with considerable environmental consequences (Ellis, Klein Goldewijk, Siebert, Lightman, & Ramankutty, 2010; Malek, Verburg, Geijzendorffer, Bondeau, & Cramer, 2018). Anthropogenic effects are especially significant in the Qinghai-Tibetan Plateau (QTP), a fragile and vulnerable ecosystem, which is highly sensitive to human disturbances (Chen et al., 2013; Ma et al., 2017; Shen et al., 2015). The land use structure of the plateau has undergone drastic transformations in the last 30–50 years due to socio-economic development and intensification of human activity (Cui & Graf, 2009; Peng, Liu, Liu, Wu, & Han, 2012; Liu et al., 2018). For example, about 30% of the region's grasslands have experienced varying degrees of degradation, leading to notable decrease in grass yield and quality. Its forest coverage dropped from 22% in 1957 to 10% in 1986; an estimated 300000 km^2 of its land has undergone desertification. These changes have generated ecological and environmental problems such as increased frequency of dust storms, excessive soil erosion, and biodiversity endangerment (Yao et al., 2012; Yu, Zhang, Zeng, Zhang, & Wang, 2012; Chen et al., 2017).

In order to address these problems, the Chinese government has implemented several ecological conservation and restoration projects since the late 20th century, including Grassland Restoration, Returning Farmland to Forest and Nature Forest Conservation Program (Miehe et al., 2008; Zhang et al., 2000). In 2001, the total restored grassland and reforestation areas in the plateau were about 160000 km^2 and 4200 km^2, respectively. These projects have contributed to a gradual improvement in the ecology and environment of the QTP. Moreover, additional planning and protection projects have been implemented (The Government of the Tibet Autonomous Region, 2009; The State Council of the Central Committee of the Communist Party of China, 2011). In 2009, the State Council approved the “Protection and Construction Planning of Ecological Safety Shelter for Tibet (2008–2030)”, and in 2011, the Government launched the “Tibetan Plateau Environmental Construction and Protection Planning (2011–2030)”. These measures aim to protect the ecological safety barrier of the QTP. Consequently, more than 155 nature reserves with different functions such

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2.1. 基于区域聚类的遥感影像分割方法

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专 利 权 人：南京大学

授权公告日：2012年07月04日

本发明经过本局依照中华人民共和国专利法进行审查，决定授予专利权，颁发本证书并在专利登记簿上予以登记。专利权自授权公告之日起生效。

本专利的专利权期限为二十年，自申请日起算。专利权人应当依照专利法及其实施细则规定缴纳年费。本专利的年费应当在每年12月01日前缴纳。未按照规定缴纳年费的，专利权自应当缴纳年费期满之日起终止。

专利证书记载专利权登记时的法律状况。专利权的转移、质押、无效、终止、恢复和专利权人的姓名或名称、国籍、地址变更等事项记载在专利登记簿上。

局长 田力普

中华人民共和国国家知识产权局

2012年07月04日

第1页（共1页）

2.2. 基于 Landsat 数据源的珊瑚岛礁遥感信息自动提取方法

证书号第1085240号

发明专利证书

发 明 名 称：基于Landsat数据源的珊瑚岛礁遥感信息自动提取方法

发 明 人：李满春；刘永学；程亮；黄秋昊；江冲亚；张昱；刘成明；李真

专 利 号：ZL 2010 1 0567507.7

专利申请日：2010年12月01日

专 利 权 人：南京大学

授权公告日：2012年11月21日

本发明经过本局依照中华人民共和国专利法进行审查，决定授予专利权，颁发本证书并在专利登记簿上予以登记。专利权自授权公告之日起生效。

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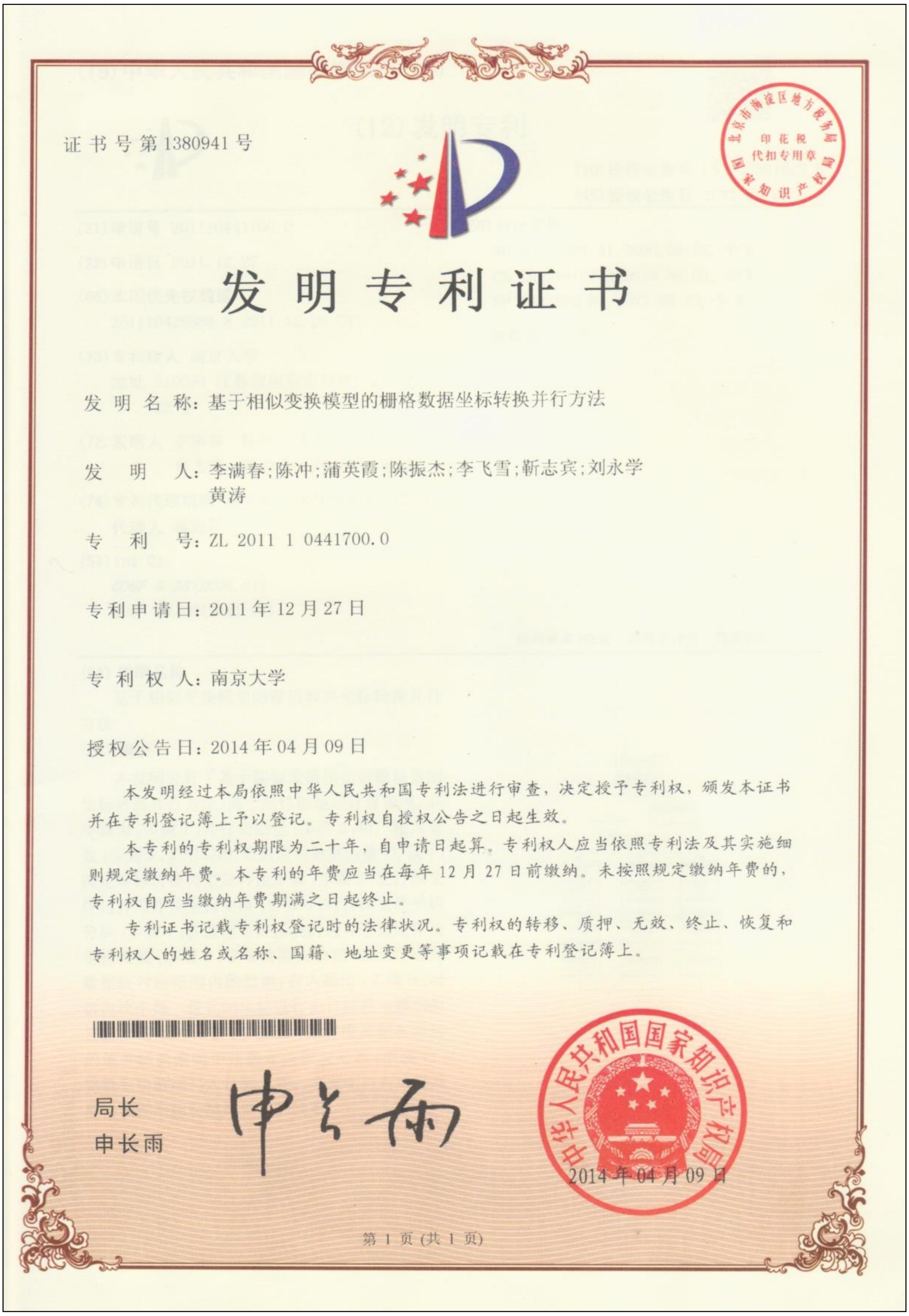
局长 田力普

中华人民共和国国家知识产权局

2012年11月21日

第 1 页（共 1 页）

2.3. 基于相似变换模型的栅格数据坐标转换并行方法



证书号第1380941号

发明专利证书

发 明 名 称：基于相似变换模型的栅格数据坐标转换并行方法

发 明 人：李满春;陈冲;蒲英霞;陈振杰;李飞雪;靳志宾;刘永学
黄涛

专 利 号：ZL 2011 1 0441700.0

专利申请日：2011年12月27日

专 利 权 人：南京大学

授权公告日：2014年04月09日

本发明经过本局依照中华人民共和国专利法进行审查，决定授予专利权，颁发本证书并在专利登记簿上予以登记。专利权自授权公告之日起生效。

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专利证书记载专利权登记时的法律状况。专利权的转移、质押、无效、终止、恢复和专利权人的姓名或名称、国籍、地址变更等事项记载在专利登记簿上。

局长
申长雨

中华人民共和国国家知识产权局
2014年04月09日

第1页（共1页）

2.4. 一种利用多时相雷达数据检测海上静止目标的方法

证书号第1261873号

发明专利证书

发 明 名 称：一种利用多时相雷达数据检测海上静止目标的方法

发 明 人：李满春；程亮；刘永学；陈振杰；李飞雪；杨康；童礼华
王亚飞；马磊；潘航

专 利 号：ZL 2012 1 0275677.7

专利申请日：2012年08月03日

专 利 权 人：南京大学

授权公告日：2013年08月28日

本发明经过本局依照中华人民共和国专利法进行审查，决定授予专利权，颁发本证书并在专利登记簿上予以登记。专利权自授权公告之日起生效。

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局长 田力普

中华人民共和国国家知识产权局

2013年08月28日

第1页（共1页）

2.5. 一种像素级 SAR 影像时间序列构建的局部自适应配准方法

证书号第1845897号

发明专利证书

发 明 名 称：一种像素级 SAR 影像时间序列构建的局部自适应配准方法

发 明 人：李满春;程亮;王亚飞;钟礼山;陈小雨;刘永学;陈振杰
李飞雪;黄秋昊;陈伟

专 利 号：ZL 2013 1 0172271.0

专利申请日：2013年05月10日

专 利 权 人：南京大学

授权公告日：2015年11月18日

本发明经过本局依照中华人民共和国专利法进行审查，决定授予专利权，颁发本证书并在专利登记簿上予以登记。专利权自授权公告之日起生效。

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专利证书记载专利权登记时的法律状况。专利权的转移、质押、无效、终止、恢复和专利权人的姓名或名称、国籍、地址变更等事项记载在专利登记簿上。

局长
申长雨

中华人民共和国国家知识产权局
2015年11月18日

第 1 页 (共 1 页)

3. 代表性软件著作权

3.1. 海岸海洋环境与资源遥感监测与评价分析系统软件

中华人民共和国国家版权局

计算机软件著作权登记证书

证书号：软著登字第0276356号

软 件 名 称：海岸海洋环境与资源遥感监测与评价分析系统软件
V1.0

著 作 权 人：南京大学

开发完成日期：2010年12月01日

首次发表日期：2010年12月01日

权利取得方式：原始取得

权 利 范 围：全部权利

登 记 号：2011SR012682

根据《计算机软件保护条例》和《计算机软件著作权登记办法》的规定，经中国版权保护中心审核，对以上事项予以登记。

中华人民共和国国家版权局
计算机软件著作权
登记专用章

2011年03月16日

3.2. 南京大学校园实景导航软件

中华人民共和国国家版权局

计算机软件著作权登记证书

证书号：软著登字第[illegible]号

软 件 名 称： 南京大学校园实景导航软件
V1.0

著 作 权 人： 南京大学

开发完成日期： 2012年12月31日

首次发表日期： 未发表

权利取得方式： 原始取得

权 利 范 围： 全部权利

登 记 号： 2013SR054635

根据《计算机软件保护条例》和《计算机软件著作权登记办法》的规定，经中国版权保护中心审核，对以上事项予以登记。

中华人民共和国国家版权局
计算机软件著作权
登记专用章

No. 00239473

2013年06月04日

3.3. 南海及其邻域历史地理情势分析系统

中华人民共和国国家版权局

计算机软件著作权登记证书

证书号：软著登字第0628472号

软 件 名 称：南海及其邻域历史地理情势分析系统 1.0

著 作 权 人：南京大学

开发完成日期：2013年08月31日

首次发表日期：未发表

权利取得方式：原始取得

权 利 范 围：全部权利

登 记 号：2013SR122710

根据《计算机软件保护条例》和《计算机软件著作权登记办法》的规定，经中国版权保护中心审核，对以上事项予以登记。

中华人民共和国国家版权局 计算机软件著作权登记专用章

No. 00351483

2013年11月09日

3.4. 遥感影像时间序列信息提取系统

中华人民共和国国家版权局

计算机软件著作权登记证书

证书号：软著登字第0874685号

软 件 名 称：遥感影像时间序列信息提取系统 1.0

著 作 权 人：南京大学

开发完成日期：2014年10月23日

首次发表日期：未发表

权利取得方式：原始取得

权 利 范 围：全部权利

登 记 号：2014SR205453

根据《计算机软件保护条例》和《计算机软件著作权登记办法》的规定，经中国版权保护中心审核，对以上事项予以登记。

中华人民共和国国家版权局 计算机软件著作权登记专用章

No. 00612469

2014年12月22日

3.5. 市域尺度国土空间利用质量评价软件

中华人民共和国国家版权局

计算机软件著作权登记证书

证书号： 软著登字第2114192号

软 件 名 称： 市域尺度国土空间利用质量评价软件 V1.0

著 作 权 人： 南京大学

开发完成日期： 2016年11月08日

首次发表日期： 2016年12月06日

权利取得方式： 原始取得

权 利 范 围： 全部权利

登 记 号： 2017SR528908

根据《计算机软件保护条例》和《计算机软件著作权登记办法》的规定，经中国版权保护中心审核，对以上事项予以登记。

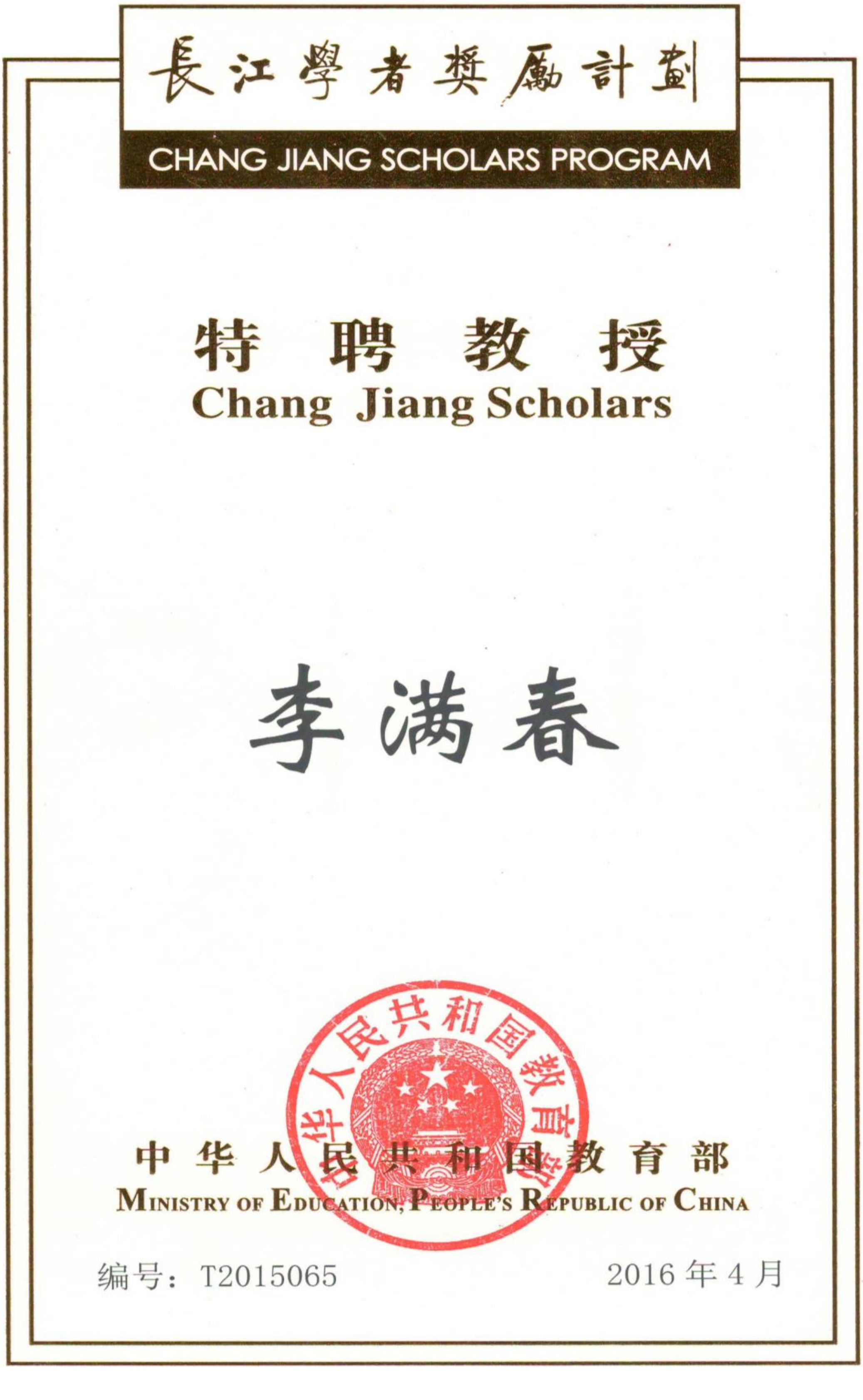
中华人民共和国国家版权局 计算机软件著作权登记专用章

No. 01976681

2017年09月19日

三、长江学者、领军人才等证明扫描件

1. 长江学者特聘教授，2015


長江學者獎勵計劃

CHANG JIANG SCHOLARS PROGRAM

特 聘 教 授

Chang Jiang Scholars

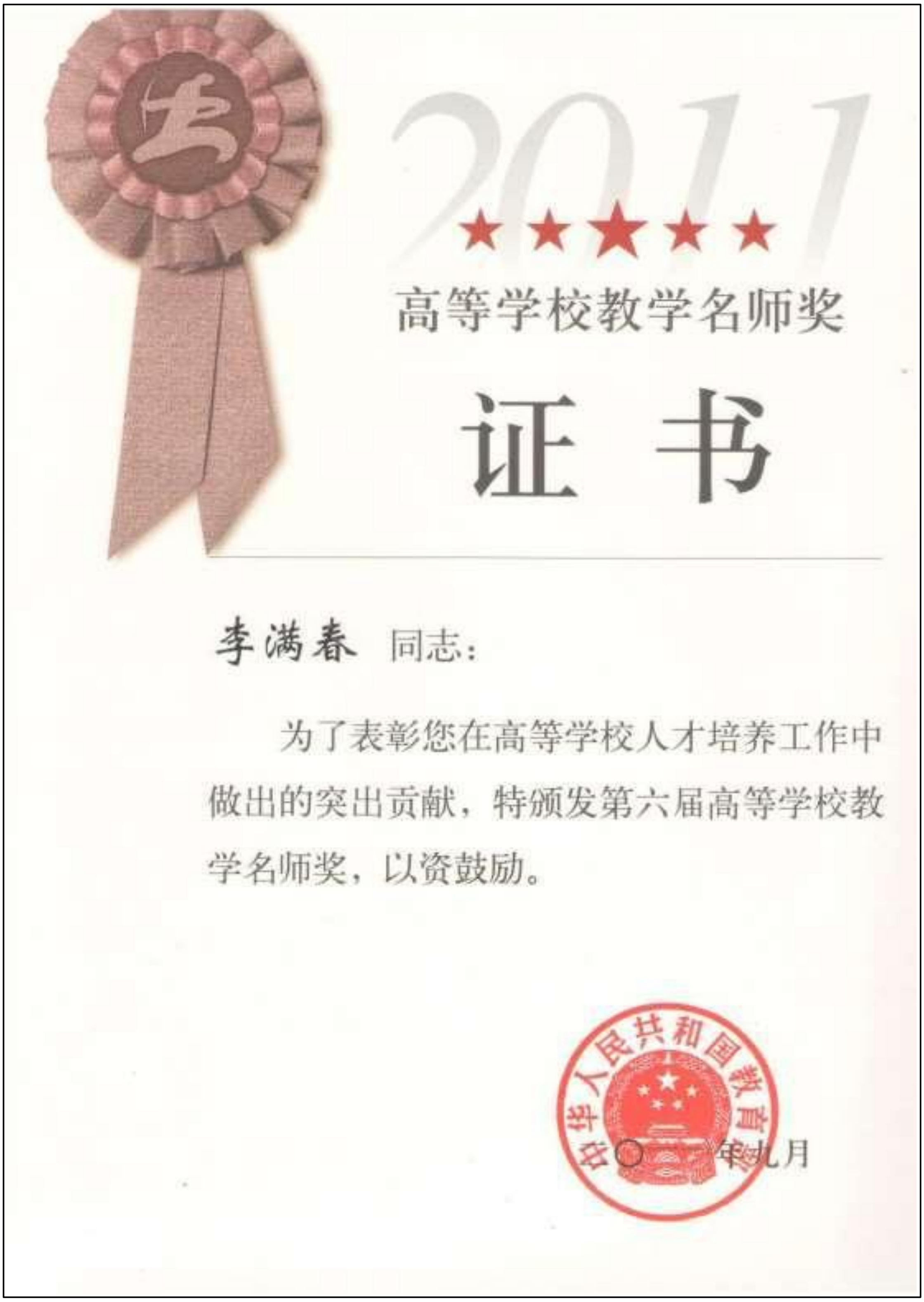
李满春

中华人民共和国教育部

MINISTRY OF EDUCATION, PEOPLE'S REPUBLIC OF CHINA

编号：T2015065 2016 年 4 月

2. 国家教学名师，2011



2011

高等学校教学名师奖

证 书

李满春 同志：

为了表彰您在高等学校人才培养工作中做出的突出贡献，特颁发第六届高等学校教学名师奖，以资鼓励。

二〇一一年九月

3. 国家高层次人才特殊支持计划领军人才，2018


证书编号：W03050042

万人计划

Wanren Jihua

国家高层次人才

特殊支持计划入选证书

李满春 同志

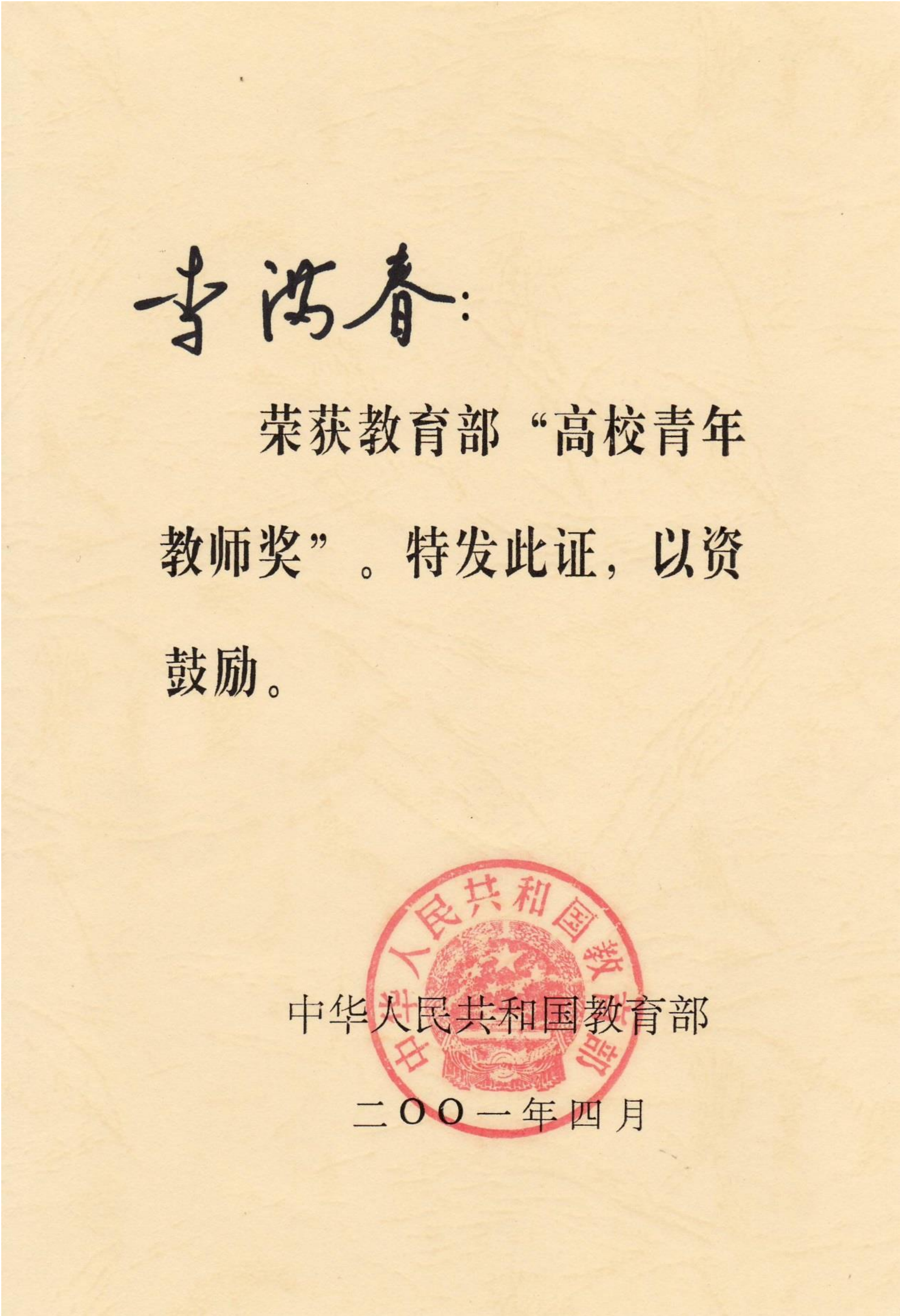
入选国家高层次人才特殊

支持计划领军人才

中共中央组织部

人力资源和社会保障部

4.　教育部高校青年教师奖，2001



李鸿春：

荣获教育部“高校青年教师奖”。特发此证，以资鼓励。

中华人民共和国教育部

二〇〇一年四月

5. 全国高等学校优秀骨干教师称号，2002


荣誉证书

李满春同志被评为全国高等学校优秀骨干教师，特发此证，以资鼓励。

中华人民共和国教育部

二〇〇二年十二月

6. 自然资源部创新型科技领军人才，2018

证书

李满春 同志入选自然资源部高层次创新型科技人才培养工程——科技领军人才开发和培养计划。

特发此证。

证书号：20180107

自然资源部

2018年6月15日

7. 国家测绘地理信息局科技领军人才，2012

证书

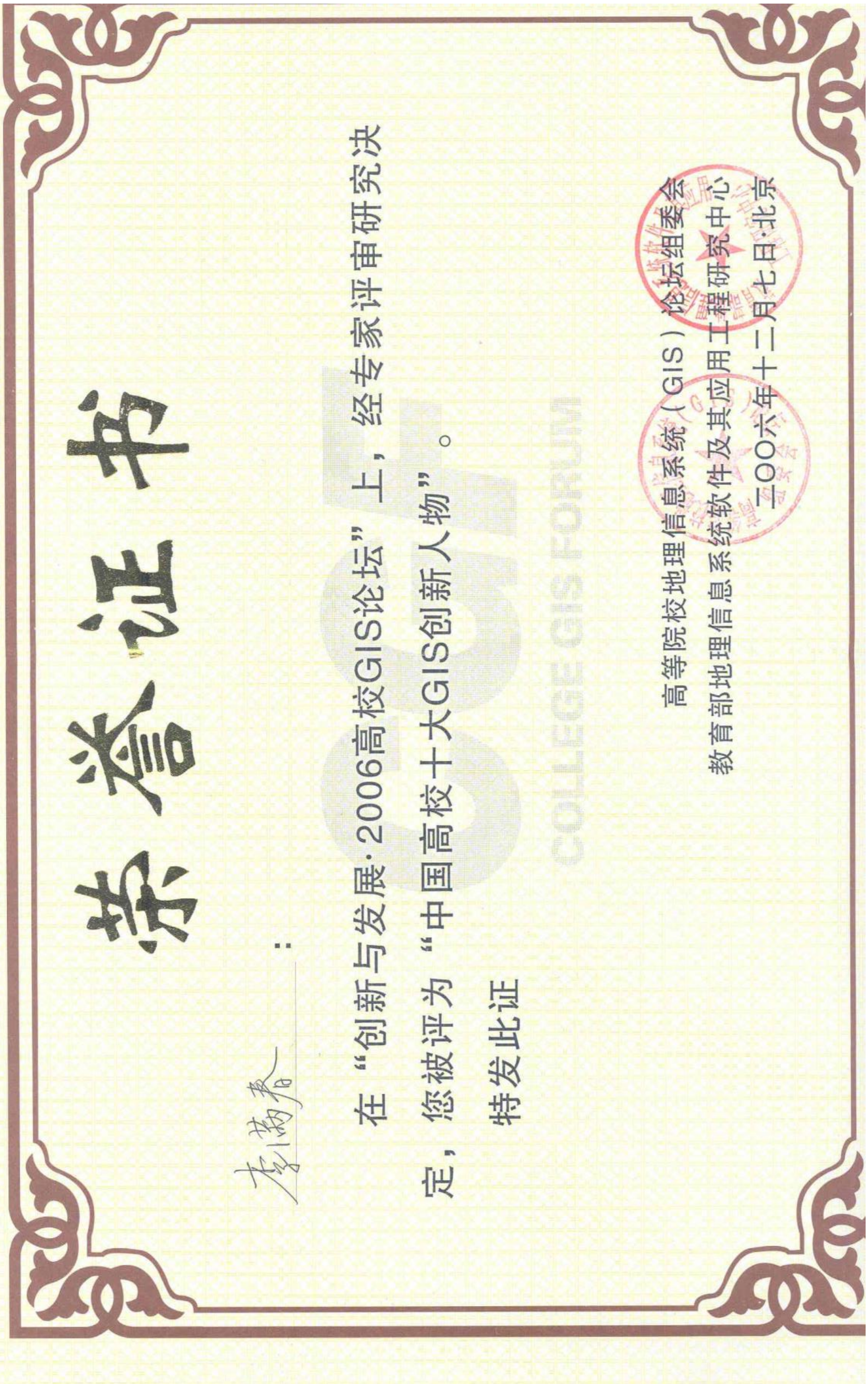
李满春 同志被评为国家测绘地理信息局科技领军人才。

特发此证。

国家测绘地理信息局

2012 年 12 月

8. 首届中国高校十大 GIS 创新人物，2006



荣誉证书

李满春：

在"创新与发展·2006高校GIS论坛"上，经专家评审研究决定，您被评为"中国高校十大GIS创新人物"。

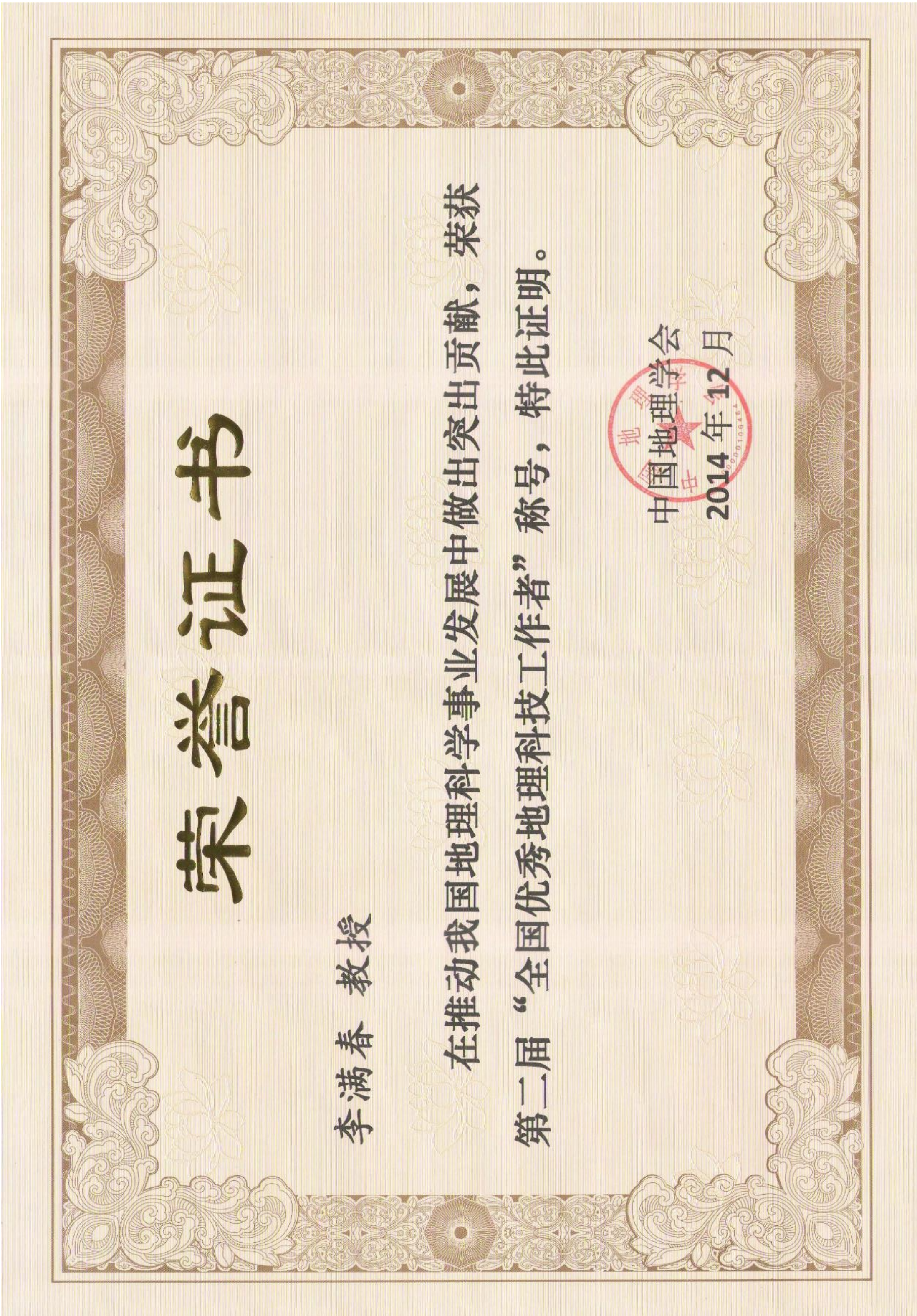
特发此证

高等院校地理信息系统（GIS）论坛组委会

教育部地理信息系统软件及其应用工程研究中心

二〇〇六年十二月七日·北京

9. 全国优秀地理科技工作者，2014



荣誉证书

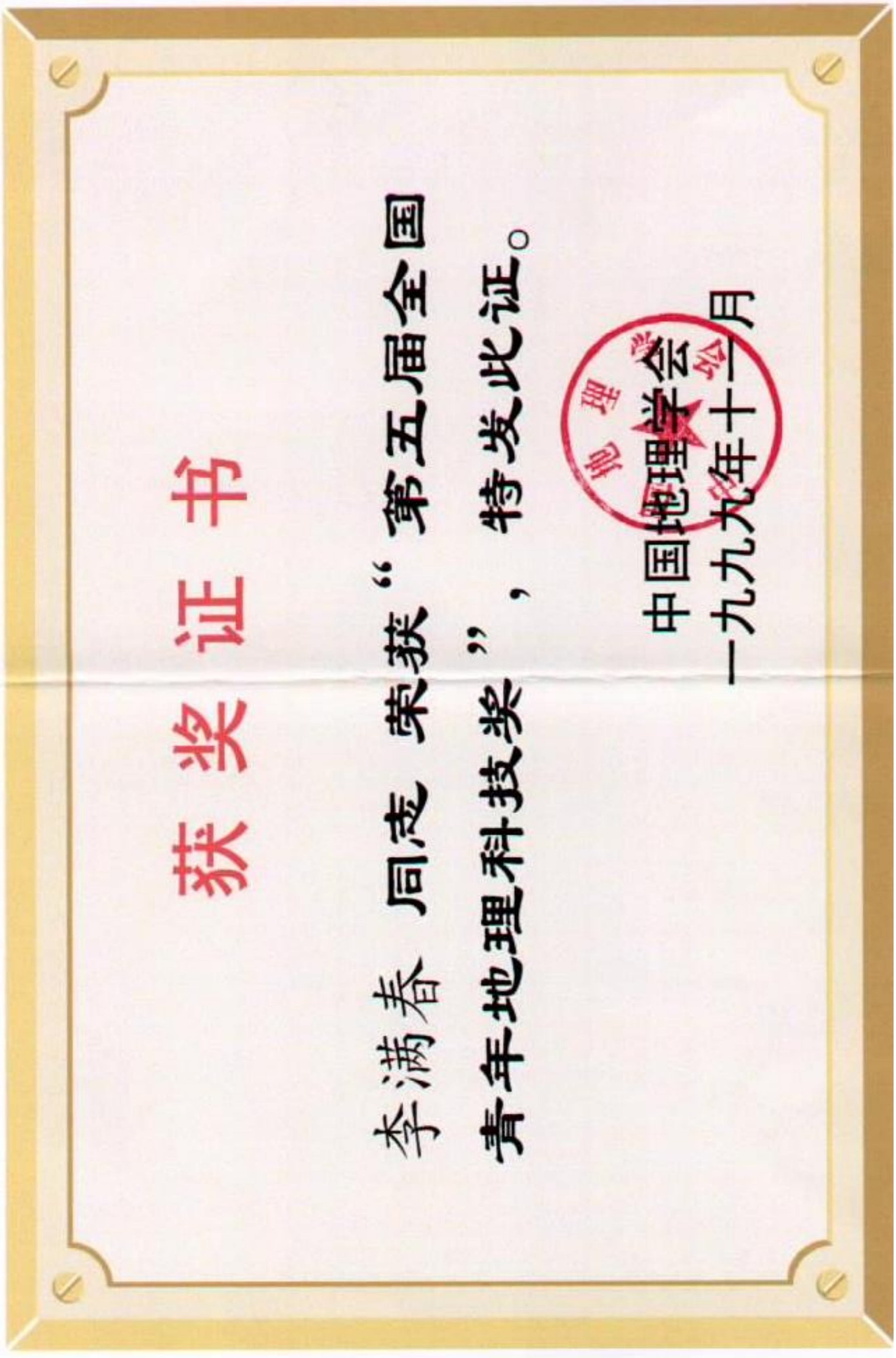
李满春 教授

在推动我国地理科学事业发展中做出突出贡献，荣获第二届“全国优秀地理科技工作者”称号，特此证明。

中国地理学会

2014年12月

10. 第五届全国青年地理科技奖，1999



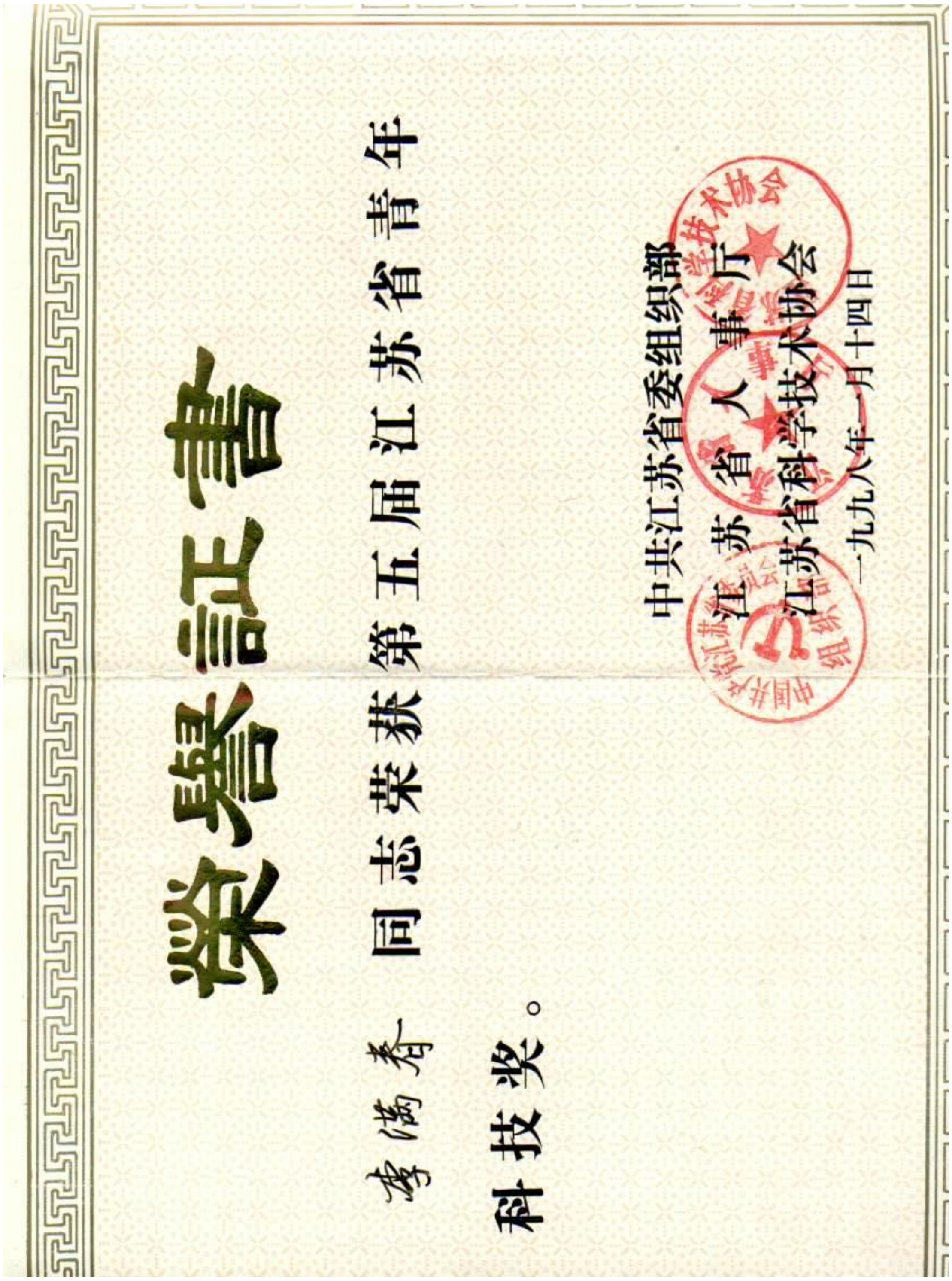
获奖证书

李满春 同志 荣获“第五届全国青年地理科技奖”，特发此证。

中国地理学会

一九九九年十一月

11．第五届江苏省青年科技奖，1998


荣誉证书

李满秀 同志荣获第五届江苏省青年科技奖。

中共江苏省委组织部
江苏省人事厅
江苏省科学技术协会
一九九八年一月十四日

12. 江苏省优秀科技工作者，2016


证书

授予：李满春 同志

第十二届江苏省优秀科技工作者称号

江苏省科学技术协会

二零一六年十一月

13. 江苏省创新争先奖章，2017

荣誉证书

HONORARY CREDENTIAL

李满春 同志：

荣获江苏省创新争先奖章。

江苏省人力资源和社会保障厅

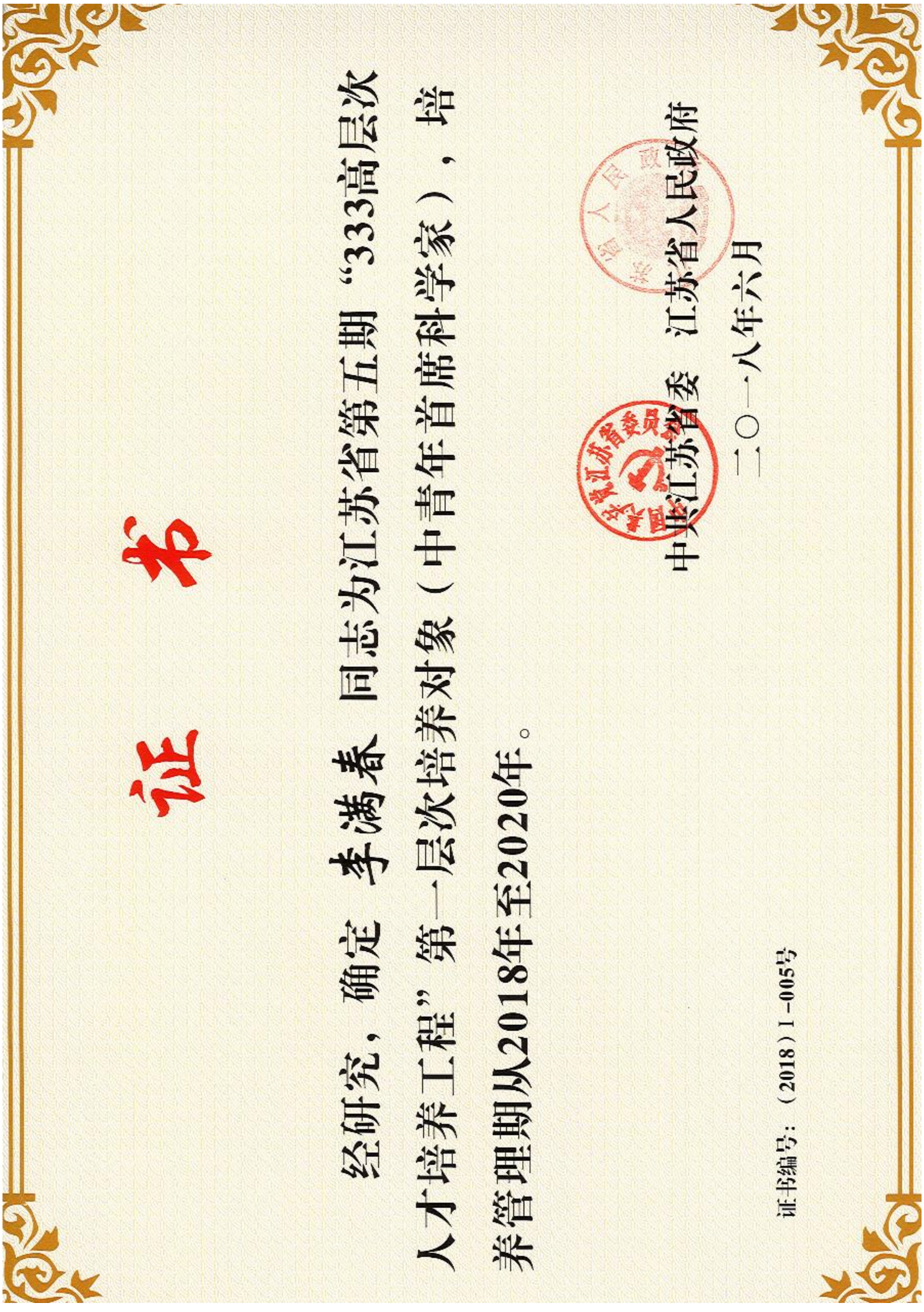
江苏省科学技术协会

江苏省科学技术厅

江苏省人民政府国有资产监督管理委员会

二〇一七年五月二十五日

14. 江苏省“333 高层次人才培养工程”第一层次，2018



证书

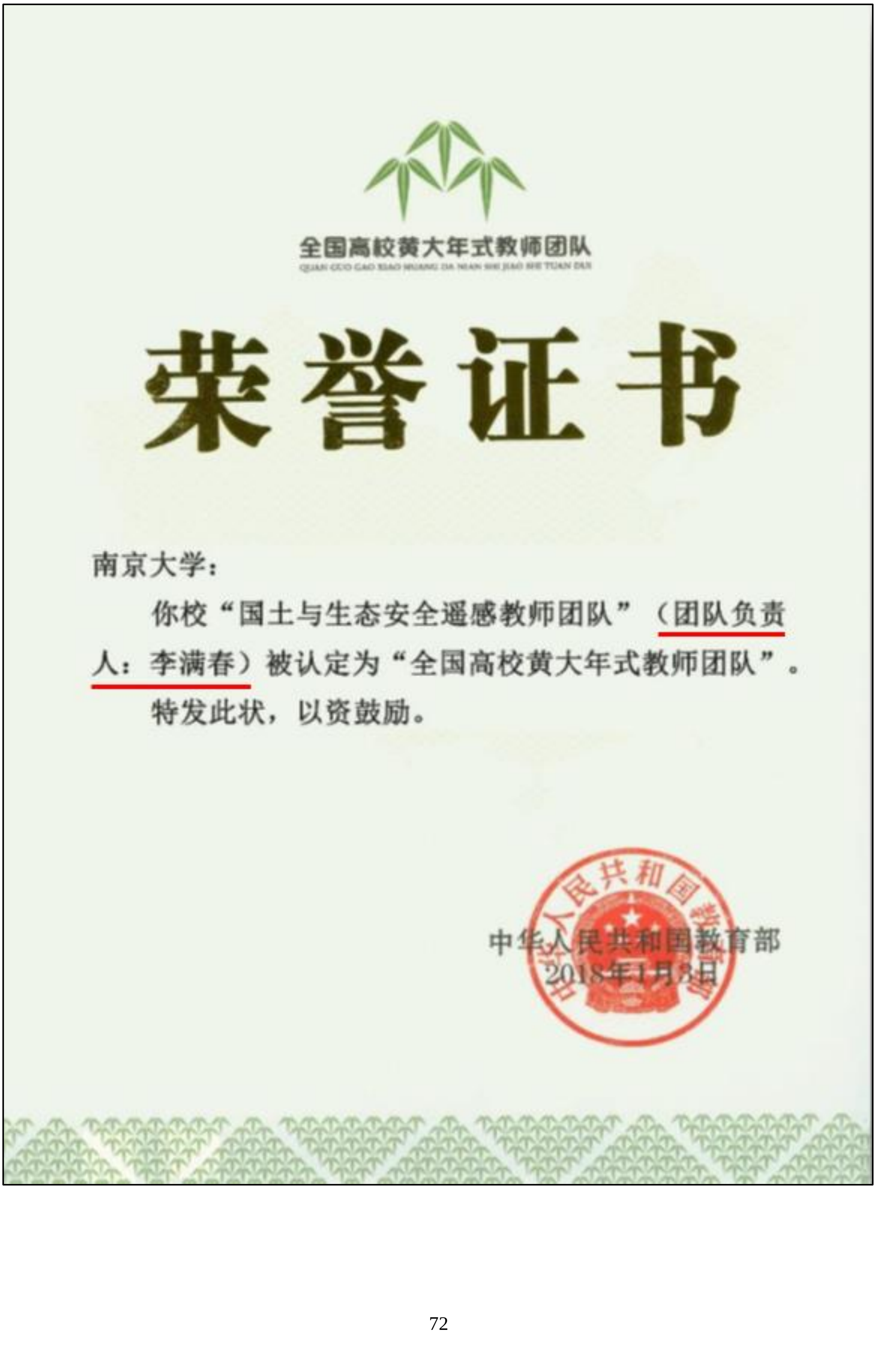
经研究，确定 李满春 同志为江苏省第五期“333高层次人才培养工程”第一层次培养对象（中青年首席科学家），培养管理期从2018年至2020年。

中共江苏省委　江苏省人民政府

二〇一八年六月

证书编号：（2018）1-005号

15. 全国高校黄大年式教师团队负责人，2018


全国高校黄大年式教师团队

荣誉证书

南京大学：

你校“国土与生态安全遥感教师团队”（团队负责人：李满春）被认定为“全国高校黄大年式教师团队”。

特发此状，以资鼓励。

中华人民共和国教育部

2018年1月3日

16. 教育部长江学者创新团队（负责人），2015

教 育 部 办 公 厅

教技厅函[2015]88号

教育部办公厅关于公布2015年教育部“创新团队发展计划”滚动支持名单的通知

有关省、自治区、直辖市教育厅（教委），新疆生产建设兵团教育局，有关部门（单位）教育司局，部属有关高等学校：

为进一步支持优秀创新团队，持续提升创新能力，孕育重大标志性成果，经有关高校推荐，专家评审，我部决定对张正竹等 64个建设效果显著、发展潜力大的教育部创新团队给予滚动支持，现将有关事项通知如下：

一、滚动支持团队的资助期限为2016年1月至2018年12月，自然科学领域资助经费300万元，哲学社会科学领域150万元，中央部属高校由学校自筹经费支持，地方所属高校由主管部门和学校共同支持。

二、有关高校应按照我部《“长江学者和创新团队发展计划”创新团队支持办法》（教人〔2004〕4号）的规定，创造条件支持团队发展，规范过程管理，于2016年6月前组织建设论证，资助期满及时组织结题验收。

三、获滚动支持的团队应从团队工作积累和特色优势出发，围绕科学前沿和国家重大需求，科学规划研究目标和人才培养机制，加强中青年拔尖创新人才的培养和引进，进一步强化科教结合，努力营造自由宽松、求真务实的学术氛围。

附件：2015年教育部“创新团队发展计划”滚动支持名单

教育部办公厅

2015年10月12日

附件

2015 年教育部“创新团队发展计划”滚动支持名单

序号	编号	学校	带头人	研究方向	资助期限	资助金额
1	IRT_15R01	安徽农业大学	张正竹	茶树次生代谢与茶叶质量安全	2016-2018 年	300 万
2	IRT_15R02	北京大学	栗占国	风湿病的发病机制、免疫诊断及治疗	2016-2018 年	300 万
3	IRT_15R03	北京大学	张强	载体给药系统的分子药剂学研究	2016-2018 年	300 万
4	IRT_15R04	北京科技大学	姜勇	低维功能材料	2016-2018 年	300 万
5	IRT_15R05	北京理工大学	孙克宁	电化学关键技术与化学电源	2016-2018 年	300 万
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32	IRT_15R32	南京大学	陈健	新型信息电磁材料与器件	2016-2018 年	300 万
33	IRT_15R33	南京大学	陈镜明/李满春	地理信息新技术及其全球变化应用	2016-2018 年	300 万
34	IRT_15R34	南京大学	尤建功	微分方程与动力系统	2016-2018 年	300 万