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## ➤ 前沿资讯

### 1 . Improved model could help scientists better predict crop yield, climate change effects (改进的模型可以帮助科学家更好地预测作物产量和气候变化效应)

简介: A new computer model incorporates how microscopic pores on leaves may open in response to light--an advance that could help scientists create virtual plants to predict how higher temperatures and rising levels of carbon dioxide will affect food crops, according to a study published in a special July 2019 issue of the journal Photosynthesis Research."This is an exciting new computer model that could help us make much more accurate predictions across a wide range of conditions," said Johannes Kromdijk, who led the work as part of an international research project called Realizing Increased Photosynthetic Efficiency (RIPE).RIPE, which is led by the University of Illinois, is engineering crops to be more productive without using more water by improving photosynthesis, the natural process all plants utilize to convert sunlight into energy to fuel growth and crop yields. RIPE is supported by the Bill & Melinda Gates Foundation, the U.S. Foundation for Food and Agriculture Research (FFAR), and the U.K. Government's Department for International Development (DFID).

来源: EurekAlert

发布日期:2019-07-09

全文链接:[https://www.eurekalert.org/pub\\_releases/2019-07/crwi-imc070819.php](https://www.eurekalert.org/pub_releases/2019-07/crwi-imc070819.php)

## ➤ 学术文献

### 1 . A new generation of the United States National Land Cover Database: Requirements, research priorities, design, and implementation strategies (新一代美国国家土地覆盖数据库: 需求, 研究重点, 设计和实施策略)

简介: The U.S. Geological Survey (USGS), in partnership with several federal agencies, has developed and released four National Land Cover Database (NLCD) products over the past two decades: NLCD 1992, 2001, 2006, and 2011. These products provide spatially explicit and reliable information on the Nation's land cover and land cover change. To continue the legacy of NLCD and further establish a long-term monitoring capability for the Nation's land resources, the USGS has designed a new generation of NLCD products named NLCD 2016. The NLCD 2016 design aims to provide innovative, consistent, and robust methodologies for production of a multi-temporal land cover and land cover change database from 2001 to 2016 at 23-year intervals. Comprehensive research was conducted and resulted in developed strategies for NLCD 2016: a streamlined process for assembling and preprocessing Landsat imagery and geospatial ancillary datasets; a multi-source integrated training data development and decision-tree based land cover classifications; a temporally, spectrally, and spatially integrated land cover change analysis strategy; a hierarchical

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theme-based post-classification and integration protocol for generating land cover and change products; a continuous fields biophysical parameters modeling method; and an automated scripted operational system for the NLCD 2016 production. The performance of the developed strategies and methods were tested in twenty World Reference System-2 path/row throughout the conterminous U.S. An overall agreement ranging from 71% to 97% between land cover classification and reference data was achieved for all tested area and all years. Results from this study confirm the robustness of this comprehensive and highly automated procedure for NLCD 2016 operational mapping.

来源: ISPRS Journal of Photogrammetry and Remote Sensing

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全文链接:[http://agri.ckcest.cn/file1/M00/06/89/Csgk0F0sTdqAU81wAJula\\_zJ5Es870.pdf](http://agri.ckcest.cn/file1/M00/06/89/Csgk0F0sTdqAU81wAJula_zJ5Es870.pdf)

## 2 . Deep learning in remote sensing applications: A meta-analysis and review (遥感应用中的深度学习: 荟萃分析与综述)

简介: Deep learning (DL) algorithms have seen a massive rise in popularity for remote-sensing image analysis over the past few years. In this study, the major DL concepts pertinent to remote-sensing are introduced, and more than 200 publications in this field, most of which were published during the last two years, are reviewed and analyzed. Initially, a meta-analysis was conducted to analyze the status of remote sensing DL studies in terms of the study targets, DL model(s) used, image spatial resolution(s), type of study area, and level of classification accuracy achieved. Subsequently, a detailed review is conducted to describe/discuss how DL has been applied for remote sensing image analysis tasks including image fusion, image registration, scene classification, object detection, land use and land cover (LULC) classification, segmentation, and object-based image analysis (OBIA). This review covers nearly every application and technology in the field of remote sensing, ranging from preprocessing to mapping. Finally, a conclusion regarding the current state-of-the art methods, a critical conclusion on open challenges, and directions for future research are presented.

来源: ISPRS Journal of Photogrammetry and Remote Sensing

发布日期:2019-04

全文链接:<http://agri.ckcest.cn/file1/M00/00/01/Csgk0V0sTWSAKKAwABT7qvSBuHE240.pdf>

### ➤ 科技报告

#### 1. 农业和农村地区数字技术报告

简介: A new publication by FAO that maps the adoption and use of digital innovations and technologies in agriculture has been published. The report comes with a short briefing paper that summarises the contents of the report and it initially explores the concept of digital agriculture divide. It recognises the various divides (e.g. rural-urban, gender divide, etc.) that

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already exists and contends that digitalization will change agri-food value chain. Digital agriculture has the potential to deliver economic benefits through increased productivity, cost efficiency and market opportunities, social and cultural benefits through increased communication and inclusivity.

来源: FAO

发布日期: 2019-06-25

全文链接: <http://www.fao.org/e-agriculture/news/digital-technologies-agriculture-and-rural-areas-report-published>

## ➤ 统计数据

### 1 . New Land Cover Maps Depict 15 Years of Change across America (新的土地覆盖地图描绘了美国15年的变化)

简介: U.S. Geological Survey (USGS) released the latest edition of the National Land Cover Database (NLCD) for the U.S. the most comprehensive land cover database that the USGS has ever produced. The NLCD 2016 documents land cover change in the Lower 48 states from 2001 to 2016. During this 15-year period, 7.6 percent of the conterminous U.S. changed land cover at least once. The database includes seven maps that portray the nation's land cover and class change for 2001, 2004, 2006, 2008, 2011, 2013 and 2016. The maps sort each 30-meter plot of land across the country into 16 thematic classes such as pasture/hay, deciduous forest or cultivated crops. The NLCD 2016 also characterizes the fractional proportion of urban imperviousness and tree canopy, and for the first time, shrub, bare ground and grassland areas in the Western U.S.

来源: 美国地质调查局 (USGS)

发布日期: 2019-05-20

全文链接: <https://www.usgs.gov/news/new-land-cover-maps-depict-15-years-change-across-america>