



2019年第34期总201期

## 农业与资源环境信息工程专题

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## ▶ 前沿资讯

### 1 . Satellite study reveals that area in Africa emits one billion tonnes of carbon (卫星研究显示非洲地区碳排放量约为10亿吨)

简介: 爱丁堡大学研究人员利用两个NASA卫星任务—日本温室气体观测卫星 (GOSAT) 和轨道碳观测站 (OCO-2) 收集的数据进行研究发现, 在埃塞俄比亚西部和非洲西部热带地区, 储存的碳已经从退化的土壤—长期或反复干旱或土地利用变化的土壤中释放出来, 碳排放的碳源仅凭土地调查或许不能全部被发现, 而且但排放的机制也尚未明确。

来源: ScienceDaily (美国)

发布日期:2019-08-13

全文链接:<https://www.sciencedaily.com/releases/2019/08/190813112213.htm>

### 2 . Unique data series will be continued (独一无二的系列数据持续提供服务)

简介: The first gravity maps of the GRACE-FO mission are now available. The twin satellites of the GFZ German Research Centre for Geosciences and NASA continuously measure the Earth's gravitational field and thus carry on the successful GRACE mission. The acronym stands for Gravity Recovery And Climate Experiment. Groundbreaking results of the GRACE mission were, for example, observations of Greenland's ice mass loss. Previously, the amount of melting could only be estimated. GRACE flew from 2002 to 2017, in May 2018 GRACE-Follow On was launched into orbit. After switching on and extensive testing of the instruments in space, GRACE-FO data on monthly changes in the gravity field are now available to the scientific community worldwide.

来源: 德国地球科学研究中心 (GFZ)

发布日期:2019-07-29

全文链接:<https://www.gfz-potsdam.de/en/media-and-communication/news/all/article/unique-data-series-will-be-continued/>

### 3 . Tiny Insect, Big Problem—Early detection of European spruce bark beetles with remote sensing (小昆虫, 大问题—遥感技术早期识别欧洲云杉树皮甲虫)

简介: Scientists of the University of Twente discovered that early detection of European spruce bark beetles is possible with remote sensing. For the first time, remote sensing data has been used successfully to show the early infestation (so-called green attack) of European spruce when still effective actions can be taken to prevent the outbreaks and further damage.

来源: The Netherlands Space Office

发布日期:2019-07-25

全文链接:<https://www.itc.nl/news/!/2019/7/83757/early-detection-of-european-spruce-bark-beetles-with-remote-sensing>

## 学术文献

### 1 . The rise of blockchain technology in agriculture and food supply chains (区块链技术在农业和食品供应链中的崛起)

简介: Blockchain is an emerging digital technology allowing ubiquitous financial transactions among distributed untrusted parties, without the need of intermediaries such as banks. This article examines the impact of blockchain technology in agriculture and food supply chain, presents existing ongoing projects and initiatives, and discusses overall implications, challenges and potential, with a critical view over the maturity of these projects. Our findings indicate that blockchain is a promising technology towards a transparent supply chain of food, with many ongoing initiatives in various food products and food-related issues, but many barriers and challenges still exist, which hinder its wider popularity among farmers and systems. These challenges involve technical aspects, education, policies and regulatory frameworks.

来源: Trends in Food Science & Technology

发布日期: 2019-07-30

全文链接: <http://agri.ckcest.cn/file1/M00/OE/7F/Csgk0F1bTVeAbNSMABhVdWynpr0352.pdf>

### 2 . Architecting user-centric internet of things for smart agriculture (以用户为中心的智能农业物联网的架构设计)

简介: Recent advancement in the technology has paved the way for the optimization of traditional industrial practices. Agriculture sector continues to serve as the backbone of the global economy. Moreover, it is required to cater the ever increasing demand for the food products arising due to rapid growth of global population. This urges for the modernization of traditional agricultural methodologies. Internet of Things (IoT) has the potential to become the key enabler for realizing the vision of Smart Agriculture. This paper proposes a user-centric IoT architecture for addressing the various issues faced in the agricultural domain. The proposed system allows the farmers to monitor their agricultural fields in real time and receive recommendations for producing good quality crops. The proposed architecture also optimizes the food supply chain in a manner that allows the farmers to maximize their overall profit on the sold goods. The applicability of the proposed architecture is evaluated using multiple uses cases encompassing the different aspects of the agriculture process. The paper also proposes a novel framework for smartphones that would facilitate the software engineers to develop applications required for implementing various functionality of the proposed system.

来源: Sustainable Computing: Informatics and Systems

发布日期: 2019-07-05

全文链接: <http://agri.ckcest.cn/file1/M00/OE/7F/Csgk0F1bTHWAMOPSAC4Ke8NpBfk571.pdf>