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农业与资源环境信息工程专题

本期导读

前沿资讯

科技报告

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前沿资讯

1．Using machine learning to understand climate change（利用机器学习探索气候变化）

简介：Methane is a potent greenhouse gas that is being added to the atmosphere through both natural processes and human activities, such as energy production and agriculture. To predict the impacts of human emissions, researchers need a complete picture of the atmosphere's methane cycle. They need to know the size of the inputs--both natural and human--as well as the outputs. They also need to know how long methane resides in the atmosphere. To help develop this understanding, Tom Weber, an assistant professor of earth and environmental sciences at the University of Rochester; undergraduate researcher Nicola Wiseman '18, now a graduate student at the University of California, Irvine; and their colleague Annette Kock at the GEOMAR Helmholtz Centre for Ocean Research in Germany, used data science to determine how much methane is emitted from the ocean into the atmosphere each year. Their results, published in the journal Nature Communications, fill a longstanding gap in methane cycle research and will help climate scientists better assess the extent of human perturbations. The study is part of Weber's effort to use data science to better understand how various greenhouse gases, including nitrogen and carbon dioxide, affect global climate systems.

来源：EurekAlert

发布日期:2019-10-08

全文链接:http://agri.ckcest.cn/file1/M00/00/02/CsgkOV2d7oeAYU8JAAHRjGfAsmg294.pdf

2．Machine learning helps plant science turn over a new leaf（机器学习帮助植物科学翻开新的一页）

简介：Father of genetics Gregor Mendel spent years tediously observing and measuring pea plant traits by hand in the 1800s to uncover the basics of genetic inheritance. Today, botanists can track the traits, or phenotypes, of hundreds or thousands of plants much more quickly, with automated camera systems. Now, Salk researchers have helped speed up plant phenotyping even more, with machine-learning algorithms that teach a computer system to analyze three-dimensional shapes of the branches and leaves of a plant. The study, published in Plant Physiology on October 7, 2019, may help scientists better quantify how plants respond to climate change, genetic mutations or other factors.

来源：EurekAlert

发布日期:2019-10-07

全文链接:http://agri.ckcest.cn/file1/M00/0E/CB/CsgkOF2d7XuADXHjAAHSW4gT4zQ751.pdf

3．Urban agriculture can push the sustainability（都市农业推动可持续化发展）

简介：A community garden occupies a diminutive dirt lot in Phoenix. Rows of raised garden beds offer up basil, watermelons and corn, making this patch of land an agricultural oasis in a desert city of 1.5 million people. In fact, this little garden is contributing in various ways to the city's environmental sustainability goals set by the city council in 2016. The goals consider matters such as transportation, water stewardship, air quality and food. With these goals in mind, a group of researchers led by Arizona State University assessed how urban agriculture can help Phoenix meet its sustainability goals. For example, urban agriculture could help eliminate so called "food deserts," communities that lack retail grocers. It also can provide green space, and energy and CO2 emissions savings from buildings.

来源：ScienceDaily（美国）

发布日期:2019-09-30

全文链接:http://agri.ckcest.cn/file1/M00/00/02/CsgkOV2d6yCAAxmrAAFLQNmrOic917.pdf

4．Planet satellites bolster FAO’s geospatial toolkit(行星卫星丰富FAO的地理空间工具包)

简介：Putting the world's eyes in the skies to work to improve human lives and combat climate change is now easier thanks to an overhaul of the Food and Agriculture Organization' innovative geospatial monitoring system. A new version of SEPAL - System for Earth Observation Data Access, Processing and Analysis for Land Monitoring - has been developed that enables advanced forest monitoring from mobile phones. It also provides access to high-resolution data updated daily by a fleet of more than 190 satellites run by Planet, an integrated aerospace and data analytics company. The new SEPAL 2.1 platform was launched in New York at the Nature for Climate Hub, an event coinciding with the United Nations Secretary General's Climate Action Summit.

来源：FAO

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全文链接:http://agri.ckcest.cn/file1/M00/00/02/CsgkOV2d75KANzsWAALnFLWMuKk132.pdf

科技报告

1．Data Management Plan for NIFA-Funded Research, Education, and Extension Projects(美国国家食品与农业研究院资助的研究，教育和推广项目的数据管理计划)

简介：美国国家农业与食品研究院（NIFA）以投资并推动农业研究、教育与推广来解决社会挑战为使命，NIFA对转型科学的资金支持保证了美国农业的长期繁荣发展和全球领先地位。增加对NIFA资助项目科学研究成果（学术出版物、数字数据集）、教育（课程和培训产品）和推广数据的获取渠道对NIFA实现催化变革性发现、教育和参与以应对农业挑战的愿景至关重要。因此，给予提交到NIFA的项目适当的数据管理计划是研究、教育和推广活动的核心组成部分。在2019财年，NIFA将为接收资助的项目申请数字管理计

划

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