

Special Issue

X-ray Computed Tomography in Agricultural Systems

Message from the Guest Editors

Most of the performed studies on soil physics are restricted to analyzing macroscopic soil properties, such as bulk density, porosity, water retention and infiltration properties. For understanding or modeling the dynamics of the soil water and soil aeration, information related to the pore size and shape distributions, pore connectivity, pore tortuosity, pore anisotropy, and pore system complexity are required. X-ray microtomography is a technique allowing the study of the soil's inner structure at the micrometric scale. The reconstruction of 3D images permits the simulation of numerous processes inside the soil. Some CT scanning systems and techniques make it possible to follow physical processes as they happen in the soil (4D tomography). Soil structure modifications due to contrasting tillage systems and uses, continuous wetting and drying cycles, irrigation processes, crop rotation and compaction are also viable using the microtomographic technique. The Special Issue aims to publish articles related to microtomography in studies involving the investigation of the structure of soils under different agricultural management and when submitted to soil-plant interaction processes.

Guest Editors

Prof. Dr. Luiz Fernando Pires

Laboratory of Physics Applied to Soils and Environmental Sciences,
Department of Physics, State University of Ponta Grossa, Ponta Grossa
84030-900, Brazil

Prof. Dr. Fábio Augusto Meira Cássaro

Laboratory of Physics Applied to Soils and Environmental Sciences,
Department of Physics, State University of Ponta Grossa, Ponta Grossa
84.030-900, Brazil

Deadline for manuscript submissions

closed (20 November 2022)



Agriculture

an Open Access Journal
by MDPI

Impact Factor 3.3
CiteScore 4.9



mdpi.com/si/121472

Agriculture

MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
agriculture@mdpi.com

[mdpi.com/journal/
agriculture](https://mdpi.com/journal/agriculture)





Agriculture

an Open Access Journal
by MDPI

Impact Factor 3.3
CiteScore 4.9



[mdpi.com/journal/
agriculture](https://mdpi.com/journal/agriculture)



About the Journal

Message from the Editor-in-Chief

Agriculture (ISSN 2077-0472) is an international, crossdisciplinary and scholarly open access journal on the science and technology of crop and animal production, and management of the natural resource base for agricultural production. *Agriculture* is published in an open access format – research articles, reviews and other contents are released on the internet immediately after acceptance. The scientific community and the public have unlimited and free access to the content as soon as it is published.

Editor-in-Chief

Prof. Dr. Les Copeland
Sydney Institute of Agriculture, School of Life and Environmental
Sciences, The University of Sydney, Sydney, NSW 2006, Australia

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubAg, AGRIS, RePEc, and other databases.

Journal Rank:

JCR - Q1 (Agronomy) / CiteScore - Q1 (Plant Science)