



X-ray Computed Tomography in Agricultural Systems

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 84.030-900, Brazil

lfpires@uepg.br

**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

fcassaro@uepg.br

Deadline for manuscript
submissions:

20 November 2022

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.





an Open Access Journal by MDPI

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

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.

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 many other databases.

Journal Rank: JCR - Q1 (*Agronomy*) / CiteScore - Q2 (*Agronomy and Crop Science*)

Contact Us

Agriculture
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/agriculture
agriculture@mdpi.com
@AgricultureMdpi