

EGU2020-9398

<https://doi.org/10.5194/egusphere-egu2020-9398>

EGU General Assembly 2020

© Author(s) 2020. This work is distributed under the Creative Commons Attribution 4.0 License.



Agricultural hydroinformatics: agricultural water systems management as a new application for hydroinformatics

Paul Celicourt, Silvio J. Gumiere, and Alain Rousseau

Université Laval, Sols et Génie Agroalimentaire, Quebec, Canada (paul.celicourt.1@ulaval.ca, silvio-jose.gumiere@fsaa.ulaval.ca)

Hydroinformatics, throughout its more than 25 years of existence, has been applied to a set of research areas. So far, these applications include: hydraulics and hydrology, environmental science and technology, knowledge systems and knowledge management, urban water systems management.

This paper introduces agricultural water systems management as a new application for hydroinformatics, and terms it as “agricultural hydroinformatics”. It presents a discipline-delineated conceptual framework originating from the particularities of the socio-technical dimension of applying hydroinformatics in agriculture. It epitomizes the wholeness and interdependencies of agricultural systems studies and modelling. It is suitable to support, not only integrated agricultural water resources management in particular, but also agricultural sustainability in general, in addition to a wide range of agricultural development situations beyond connections between agro-economic and water engineering development and its socio-economic impacts.

The paper also highlights some contributions of hydroinformatics to agriculture including new kinds of sensing technologies, information and simulation models development that bear the potential to boost reproducibility of agricultural systems research through systematic and formal records of the relationships among raw data, the processes that produce results and the results themselves.