2nd International Convention on

Geosciences and Remote Sensing

November 08-09, 2017 | Las Vegas, USA

Research and implementation of a universal workflow model to evaluate the soil fertility based on OWS

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A method based on workflow technology and Open Geospatial Consortium (OGC) specification is proposed in this study to establish a common workflow conceptual model in the network environment. For instance, the soil fertility evaluation conceptual model was developed as an evaluation method of soil fertility by analyzing the GIS-based fertility evaluation method and extracting the dynamic variable to verify the feasibility of such a model. This validation process involves determining the instantiation of the conceptual model. The proposed model achieved the following goals: first, all data acquisition and processing functions were packaged into an OGC-compliant service model; second, various models were organized into a processing chain in a certain order on the workflow platform by Petri-Net; finally, the fertility evaluation was realized on the workflow platform by calling the processing chain. Results showed that processing functions and data can be shared in the network environment and that the network workflow model can be realized by the workflow technology. The successful implementation of the fertility evaluation model proved feasibility of common network workflow conceptual model.

Biography

Jiaying Chen has completed his PhD from Wuhan University. He is currently an Associate Professor of Huazhong Agricutural University. He has published more than 10 papers in reputed journals. His research focuses on the WebGIS, soil information system.

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