

Geospatial big data analytics for agriculture using IBM-PAIRS

Anne Jones, Blair Edwards, Katharina Reusch, and Paolo Fraccaro
IBM Research, Warrington, United Kingdom (anne.jones@ibm.com)

Exponentially increasing volumes of earth observation, model simulation, sensor/IoT and other geolocated data provide an unprecedented opportunity for geospatial modelling. However, although many such datasets are freely available, their size and complexity mean they are challenging to retrieve, store and combine, especially over large geographical areas or for time-critical applications. The IBM PAIRS Geoscope platform has been developed to address these challenges, providing a scalable data repository and curation service to automatically update, join and homogenize geospatial data layers in space and time. Once data have been consolidated in PAIRS, queries across multiple data layers can be run in real time, providing a foundation for analytics applications. This approach is particularly useful in weather and climate impact modelling, which typically requires several geospatial data layers to be combined with simulation and/or machine learning models. This poster, together with the accompanying software demonstration, will provide an overview of the current capabilities of the PAIRS platform (which is free to use), and illustrate a number of weather-driven analytics pipelines which use data from PAIRS to make predictions relevant to agriculture. These include (1) moth risk forecasting using wind data and vertical-looking radar measurements of moth density, and (2) vector-borne disease prediction for livestock using temperature-derived risk maps.