

## Utilize Cloud Computing to Leverage Open Data for Science Discoveries

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Petabytes of Earth observation data are collected through sensors from different aspects and at different spatial, spectral, and temporal resolutions. They are of great value to support scientific research and phenomena prediction for policy making. To better support the fast processing, integration, and assimilation of the data into models for simulating potential results, an on-demand and elastic computing infrastructure is required. This paper reports our investigation of using cloud computing to address this important needs based on several examples including dust storm forecasting and climate studies. The research results show that it is very promising for cloud computing to become the computing infrastructure and provide enabling capabilities for Digital Earth, Earth Exchange, EarthCube, and Earth Science Col-laboratory. Cloud computing could also play a role that brings open data closer to open science.