`rocker/geospatial`: a flexible runtime environment for geoscientific data analysis

Daniel Nüst (1), Carl Boettiger (2), and Dirk Eddelbuettel (3)

(1) University of Münster, Institute for Geoinformatics, Münster, Germany (daniel.nuest@uni-muenster.de), (2) UC Berkeley, ESPM Department, University of California, CA, USA, (3) Debian and R Projects; Ketchum Trading Chicago, IL, USA

R is a free software environment for statistical computing and graphics (https://r-project.org). Over the last years it has become a popular tool for geospatial analysis (cf. Pebesma et al., 2012; Dietze et al., 2017). At the same time Docker (https://docker.com) revolutionized the way applications and their dependencies are packaged and deployed. Boettiger and Eddelbuettel (2017) describe the Rocker project (https://www.rocker-project.org/), which hosts a variety of Docker images. These images provide well-defined and portable environments to support scalability, reproducibility, and testing. One of these images is `rocker/geospatial`. It "extends the rocker-versioned stack with geospatial-related tools, particularly those that can be difficult or slow to add on-the-fly" (Rocker, 2017).

This presentation showcases works based on `rocker/geospatial`, ranging from rendering textbooks to web interactive applications cloud environments. It discusses its history as a user-driven effort, and describes its role amongst the different Rocker images. The image provides a toolkit to perform geospatial analysis leveraging all advantages of the versioned Rocker stack, such as time-stamped depencies from MRAN (https://mran.microsoft.com/). More importantly, it eases the use of recent core libraries, such as GDAL (http://gdal.org/), which "can be slow or tricky to install due to compiled code and external dependencies" (Rocker, 2017).

`rocker/geospatial` provides a basis for increased transparency and reproducibility in geosciences and is a powerful platform to tackle pressing challenges in data handling and data analysis. It can improve the quality of software, research and teaching as well as enhance peer review processes. It is a tool worth knowing for every scientist and developer in the geospatial domain who uses R.

References

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