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Reproducible visuals of meteorological data in scientific publications

The importance of visuals in scientific publications has increased in recent years. Not only because nowadays, but we also tend to advertise scientific papers on platforms such as Twitter or LinkedIn, where it is always helpful to add a compelling visual to accompany any text. Journals are also increasingly requesting a higher quality in paper graphics. In articles in the meteorological field, the production of map plots of meteorological fields is essential. Several Python libraries exist to produce and customise a wide range of map plots. However, the quality of map plots from more niche software like Metview can be higher and more preferable. Metview is a workstation application aimed at both the operational and research meteorologist. Its capabilities include meteorological data access, processing and visualization. It features a rich library of Python functions and classes and a powerful user interface for interactive work. The problem with using such software is that it might not be easy for everyone to reproduce the map plots either because people might not have the software installed or because they are unfamiliar with its language. To facilitate the reproducibility of code created in Metview-Python, we need to share the code itself, but we also need to share the environment with which we run the code. Platforms like MyBinder.org allow sharing code efficiently and running it on a web browser, so local installations might not be required. This talk will show how Metview has been recently adapted to tools like Zenodo, Jupyter notebooks, and Binder to help scientists share their science complying with the highest standards in workflows and publications reproducibility.

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