

A New Approach for Transparent and Reproducible Data Analysis

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Recent developments in the COMPRES user facilities have dramatically improved the quality of the data collected and the efficiency of the measurements. New techniques have enabled us to measure multi-dimensional data, such as 2D mapping and 3D tomography. As a result, data volume has increased significantly and the data structure has become much more complicated. However, existing approaches are not sufficiently adaptive enough for such rapid evolution of data. In other communities, such challenges have been addressed through open-source software toolkits which provide adaptive, flexible, reproducible, and transparent solutions. COMPRES has played a central role in the hardware developments for more than a decade. Now, it is urgent for COMPRES to implement a new approach for software resource developments. In this presentation, I will present a few examples of data analysis through this approach using the Python programming language combined with Jupyter notebook.