

IPython: tools for the lifecycle of research computing

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IPython (<http://ipython.org>) started as a better interactive Python interpreter in 2001, but over the last decade it has grown into a rich and powerful set of interlocking tools aimed at enabling an efficient, fluid and productive workflow in the typical use cases encountered by scientists in everyday research.

In this talk we will show how IPython supports all stages in the lifecycle of a scientific idea: individual exploration, collaborative development, large-scale production using parallel resources, publication and education. In particular, the IPython Notebook supports multiuser collaboration and allows scientists to share their work in an open document format that is a true "executable paper": notebooks can be version controlled, exported to HTML or PDF for publication, and used for teaching. We will demonstrate the key features of the system, including recent examples of scientific publications made with the notebook.