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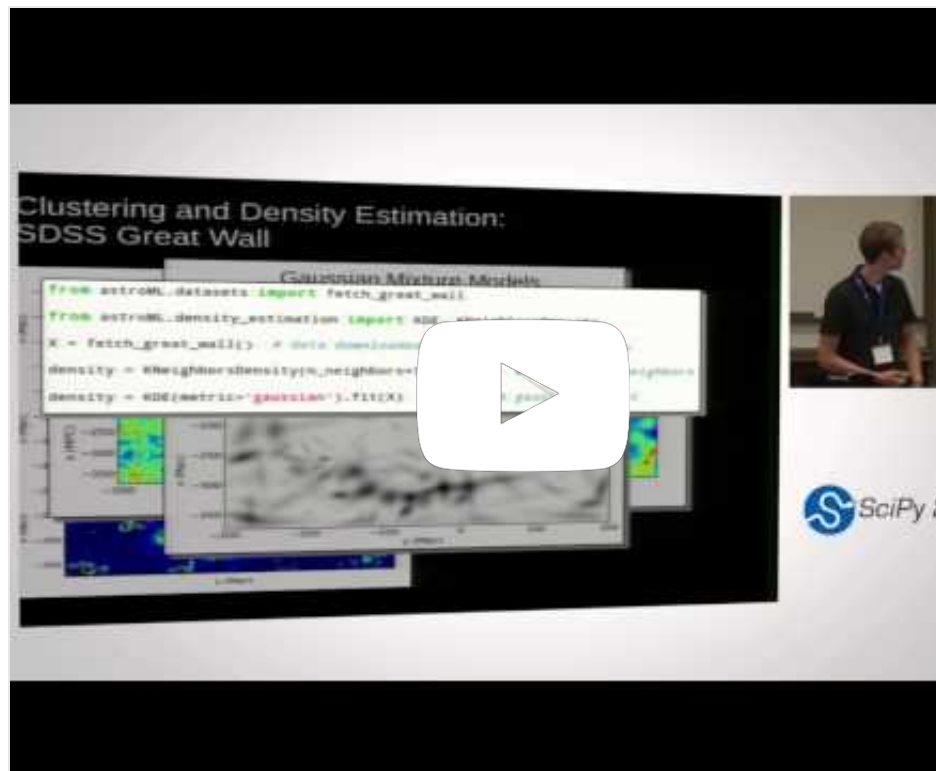
Opening Up Astronomy with Python and AstroML; SciPy 2013 Presentation

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Published on 2 Jul 2013

Description

Authors: Vanderplas, Jake, University of Washington; Ivezic, Zeljko, University of Washington; Connolly, Andrew, University of Washington Track: General As astronomical data sets grow in size and complexity, automated machine learning and data mining methods are becoming an increasingly fundamental

component of research in the field. The astroML project (http://astroML.github.com), first released in fall 2012, provides a common repository for practical examples of the data mining and machine learning tools used and developed by astronomical researchers, written in python. The astroML module offers a host of general data analysis and machine learning routines, loaders for openly-available astronomical datasets, and fast implementations of specific computational methods often used in astronomy and astrophysics. The associated website features hundreds of examples of these routines in action, using real datasets. In this talk I'll go over some of the highlights of the astroML code and examples, and discuss how we've used astroML as an aid for student research, hands-on graduate astronomy curriculum, and the sharing of research tools and results.