ASTR8150/PHYS8150
Project

Fabien Baron

Georgia State University

baron@chara.gsu.edu

Fall 2019

DIY Project

- Identify a problem in your field solved with data analysis techniques. You can pick a problem you know about, or choose one from the papers in the next slides.
- Ideally related to a paper published within the last 5 years
- Write and email me your PDF report (2-3 pages):
    1. introduce the nature of the problem
    2. explain how the data analysis technique solves the problem
    3. explain what are the potential limitation of the method, and/or future work

Possible papers

- *Wavelets in Temporal and Spatial Processing of Biomedical Images*, `https://www.annualreviews.org/doi/abs/10.1146/annurev.bioeng.2.1.511`
- *Local Bayesian optimizer for atomic structures*, `https://journals.aps.org/prb/abstract/10.1103/PhysRevB.100.104103`
- *On the use of deep learning for computational imaging* `https://www.osapublishing.org/optica/abstract.cfm?uri=optica-6-8-921`

Possible papers

- *Markov Chain Monte Carlo Methods for Bayesian Data Analysis in Astronomy*, `https://www.annualreviews.org/doi/abs/10.1146/annurev-astro-082214-122339`
- *Fast and Scalable Gaussian Process Modeling with Applications to Astronomical Time Series*, `https://iopscience.iop.org/article/10.3847/1538-3881/aa9332`
- *Digital Image Reconstruction: Deblurring and Denoising* `https://www.annualreviews.org/doi/abs/10.1146/annurev.astro.43.112904.104850`