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| Title: | Model dependent and independent methods of cosmological parameter estimation |
| Authors: | Kapoor, Parth. |
| Keywords: | Cosmological Parameter Estimation |
| Issue Date: | 28-Jul-2021 |
| Publisher: | IISERM |
| Abstract: | The universe is known to be expanding, the cause of which is said to be a mysterious, dark energy, named so, as it is of unknown origin. There are several candidate models, each of which bring with them their own set of free parameters that can be tuned to fit available data. In fact, too many such models exist; that is the problem — not enough of them have been falsified. In this thesis, we will look at two ways to recreate dark energy — a parametric and a non- parametric, model independent approach. Along the way, we will learn about Bayesian statistics, multi-variate probability distributions, Markov Chain Monte Carlo methods, and Gaussian processes — tools we will use to analyze data from observations in an attempt to nail down the origin of dark energy. |
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