

Implementation of an Inpainting Filter to Mitigate the Effect of Glitches on Gravitational-Wave Parameter Estimation

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Recovering accurate distributions for the source parameters of gravitational-wave signals is essential to confirm current models of general relativity and understand astrophysical properties of the universe. Glitches in gravitational-wave strain data may cause a bias in parameter estimation analyses that use Bayesian inference. We implement inpainting to address this problem in Bilby, one of various parameter estimation pipelines used for gravitational-wave analyses. Using two different methods to obtain inpainted data, we study how each process affects likelihood evaluation times and Bilby's ability to recover accurate posterior distributions. We will also work towards running different PE analyses using inpainted data with injected signals and studying how often Bilby can recover injected parameter values within a specific confidence interval.