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Accelerating SGWBinner code with the JAX framework

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SGWBinner is a primary tool to investigate the reconstruction of cosmological gravitational wave signals with LISA. Its algorithms are highly developed and most parts of the analysis can be done easily on a laptop, but the final MCMC part is still time consuming. To overcome this situation and accelerate the study of cosmological gravitational wave sources, we have accommodated the JAX framework in the existing code. This provides faster computation of the likelihood function and depending on the template, MCMC becomes a few to ten times faster. As a demonstration, we report the analysis with generalized foreground parameters.

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