

Robust Inference of the Binary Black Hole Spin Population Using Gravitational-Wave Data

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The spin population of binary black holes (BBHs) provides key insights into their formation channels. Recent gravitational-wave (GW) observations have suggested the presence of spin subpopulations and correlations between spin and other BBH parameters. However, the limited measurability of spins in certain regions of the parameter space can bias the inference of the underlying spin population. We propose a new inference method to mitigate this limitation, demonstrate its performance using simulations, and apply it to real GW data to infer the underlying BBH spin population.

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