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Unraveling the origin of Black Holes from effective spin measurements

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The remarkable discovery of gravitational waves from binary black hole mergers has given us a new way to study our universe. The origin of the black hole binaries remains unclear, I investigate whether information on the effective spin of binary black hole mergers from the LIGO-Virgo gravitational wave detections can be used to discriminate primordial versus astrophysical black holes. I will also present the posterior probability density for a possible mixture of astrophysical and primordial BHs as emerging from current data, and calculate the number of future mergers needed to discriminate different spin and alignment models at a given level of significance.

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