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**Selection biases of nonspinning searches for spinning binaries**

ANDREW LUNDGREN, DUNCAN BROWN, Syracuse University, RICHARD O'SHAUGHNESSY, Penn State — Current searches for compact binary mergers by ground-based detectors assume for simplicity that the two bodies are not spinning. If black holes (BHs) are rapidly spinning, this limitation significantly biases searches for realistic BH-BH and particularly BH-NS binaries. We present accurate fits for the range to which a binary can be seen by a single detector, accounting for both (i) its band-limited loudness along the line of sight, as a function of all combinations of masses and spins, and (ii) the best match between the real signal and nonspinning model waveform. We discuss the biases caused by these effects as well as physical and mathematical intuitions for the behavior of the signals.

Andrew Lundgren  
Syracuse University

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