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Gravitational wave observations of spinning black holes BIRJOO VAISHNAV, DEIRDRE SHOEMAKER, FRANK HERRMANN, IAN HINDER, RICHARD O'SHAUGHNESSY, Center for Gravitational Wave Physics — We present studies of the effect of spin precession on gravitational radiation in the last few orbits of merging massive black hole binaries. Several numerical relativity waveforms for different initial spin orientations are now available. We study the variation of the merger/ringdown signal to noise ratio for massive and intermediate mass binaries ($M_{total} > 50M_{\odot}$) on the initial spin orientations, and find that the signal strength and hence the detection volume accessible to ground based detectors varies significantly for generic initial spin orientations. This could be important in constraining astrophysical models of binary black hole mergers.

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