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## A new method for incorporating precession and higher-order modes in searches for compact binaries

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Advanced LIGO's current matched-filter searches for binary mergers model only the dominant mode of binaries whose orbital angular momentum is aligned with the total angular momentum. Some models of binary formation predict a population of systems where these simplifying assumptions will not hold, and so a search that includes them may be necessary to discriminate between these models. In this talk we describe a new technique for including the effects of higher-order modes and precession, that directly maximizes the likelihood over extrinsic parameters without a grid search.

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