Quantifying the importance of higher harmonics in binary black hole observations

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The most recent models of the gravitational-wave (GW) signal from binary black holes have begun to include information on the sub-dominant signal multipoles. With these models we are able for the first time to quantify the biases that would be incurred by neglecting higher multipoles, the parameters for which measurements are *improved* by including higher multipoles, and by how much, and, through injections of numerical relativity waveforms, to assess the inaccuracies that remain in current models. We present the results of such a study using the recent IMRPhenomHM model.