Directly comparing gravitational wave data to numerical relativity simulations: systematics JACOB LANGE, RICHARD O’SHAUGHNESSY, JAMES HEALY, CARLOS LOUSTO, YOSEF ZLOCHOWER, Rochester Institute of Technology, DEIRDRE SHOEMAKER, Georgia Institute of Technology, GEOFFREY LOVELACE, California State University, Fullerton, CHRISTOPHER PANKOW, Northwestern University, PATRICK BRADY, University of Wisconsin-Milwaukee, MARK SCHEEL, California Institute of Technology, HARALD PFEIFFER, CITA, University of Toronto, SERGUEI OSSOKINE, Albert Einstein Institute — We compare synthetic data directly to complete numerical relativity simulations of binary black holes. In doing so, we circumvent ad-hoc approximations introduced in semi-analytical models previously used in gravitational wave parameter estimation and compare the data against the most accurate waveforms including higher modes. In this talk, we focus on the synthetic studies that test potential sources of systematic errors. We also run "end-to-end" studies of intrinsically different synthetic sources to show we can recover parameters for different systems.

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