Intersections between numerical and analytic relativity

Aaron Zimmerman, The University of Texas at Austin

In order to predict gravitational wave signals from merging compact objects, we must solve the relativistic two-body problem. Numerical simulations provide costly solutions for the final inspiral and merger of compact bodies, while analytic methods can provide approximate solutions over wide regions of parameter space. The regions where these methods overlap provide space for new discoveries about the two-body problem, and both approaches are needed to produce practical gravitational wave models. I will review what is known about the overlap of numerical and analytical approaches, mention some recent advances at the interface, and discuss future directions.