Numerical Relativity, Black Hole Mergers, and Gravitational Waves: Part II

Joan Centrella

Deputy Director, Astrophysics Science Division NASA's Goddard Space Flight Center Greenbelt, MD 20771 USA

This series of 3 lectures will present recent developments in numerical relativity, and their applications to simulating black hole mergers and computing the resulting gravitational waveforms. In this second lecture, we focus on simulations of black hole binary mergers. We highlight the instabilities that plagued the codes for many years, the recent breakthroughs that led to the first accurate simulations, and the current state of the art.