

APR18-2018-020015

Abstract for an Invited Paper
for the APR18 Meeting of
the American Physical Society

The Pre-History of the Two Black Hole Collision Problem

LARRY SMARR, Department of Computer Science and Engineering, University of California, San Diego

From the first mathematical solution of Einsteins equations of General Relativity, representing what we now know as a black hole, in 1918 to the observation of the gravitational radiation from two colliding black holes in 2015 was almost 100 years. I will give a brief history of the mathematical and computational developments, up to the 1970s when the first computational solution of Einsteins equations for two black holes colliding head-on was obtained. The 1920s saw the equation of motion posed, the 1930s envisioned the two-body problem, the 1940s set up the Cauchy problem, the 1950s conceived of numerical relativity, the 1960s witnessed the first numerical solutions, and the 1970s produced the first numerical collision with generation of gravitational radiation.