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Gravitation and General Relativity

Collision of Two Black Holes: Computer Generated Spacetime. LARRY SMARR and B. S. DEWITT, Univ. of Texas at Austin--Revising an earlier approach by Andrej Čadež, we have developed a computer code to integrate the full Einstein equations starting from the Misner time-symmetric initial conditions. This generates the spacetime of two Schwarzschild black holes colliding head-on. We must solve four coupled hyperbolic (evolution) equations and one elliptic (maximal slicing) equation on each spacelike sheet, generalizing to two space dimensions the techniques successfully utilized to generate by computer the one black hole spacetime.* Preliminary numerical results are presented.

*Estabrook, et. al., Phys. Rev. D7 2814 (1973).

Submitted by

Bryce S. DeWitt
Signature of APS Member

Bryce S. DeWitt
Same name typewritten

Department of Physics
Address

The Univ. of Texas at Austin

Austin, Texas 78712