Abstract Submitted for the APR09 Meeting of The American Physical Society

BSSN revisited DAVID BROWN, North Carolina State University — The puncture method for numerical evolution of black holes relies on the BSSN formulation of Einstein's equations and a standard set of gauge evolution equations. There are a number of issues that are not well understood. For example: (1) Some of the characteristics are incoming at the puncture. What boundary conditions does the puncture prescription effectively impose? (2) BSSN with the standard gauge is susceptible to gauge shocks. How are shocks avoided in practice? I will report on progress toward answering these and other questions.

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Date submitted: 08 Jan 2009 Electronic form version 1.4