1023-65-1882   **Blake Temple*** (`temple@math.ucdavis.edu`), Department of Mathematics, 1 Shields Avenue, University of California at Davis, Davis, CA 95616. *A Proposal to Numerically Simulate a Cosmic Shock Wave by Use of a Locally Inertial Glimm Scheme.* Preliminary report.

I discuss a proposal to numerically simulate a cosmological shock wave using ideas from the author's prior work on a Locally Inertial Glimm Scheme. The problem is motivated by work with J. Smoller, (Proc. Nat. Acad. Sci., USA, Vol. 100, no. 20, pp. 11216-11218), in which we construct a solution of the Einstein equations in which the Big Bang is a White Hole explosion that generates an outgoing, spherical, entropy satisfying shock wave. Our recent work indicates that a wave qualitatively similar to this would emerge from the standard inflationary cosmology if the spacelike slice that emerged co-moving with the perfect fluid at the end of inflation, were a space of "finite total mass". In this talk I discuss a proposal to numerically simulate this wave exactly using numerical ideas arising from the author's analysis of a Locally Inertial Glimm Scheme for spherically symmetric spacetimes. The author's work in cosmology is all joint work with Joel Smoller, while the idea of the Locally Inertial Glimm Scheme was introduced in the author's joint work with Jeffrey Groah. Involved in the numerical project will be UC-Davis students Brian Wissman and Zeke Vogler. (Articles and commentaries can be found on author's website: http://www.math.ucdavis.edu/ temple/articles/) (Received September 27, 2006)