

Abstract Submitted
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Solving Einstein's Equation Numerically on Manifolds with Arbitrary Topologie LEE LINDBLOM, University of California at San Diego — This talk will summarize some of the numerical methods we have developed for solving Einstein's equation numerically on manifolds with arbitrary spatial topologies. These methods include the use of multi-cube representations of arbitrary manifolds, a convenient new way to specify the differential structure on multi-cube representations, and a new fully covariant first-order symmetric hyperbolic representation of Einstein's equation. Progress on the problem of constructing the "reference metrics" (which are an essential element of our numerical method) for arbitrary manifolds will be described, and numerical results will be presented for some example simulations.

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