Meeting: 1004, Bowling Green, Kentucky, SS 14A, Special Session on Geometric Topology and Group Theory

1004-57-172 **Dubravko Ivanšić*** (dubravko.ivansic@murraystate.edu), Department of Mathematics and Statistics, Murray State University, Murray, KY 42071, **John G. Ratcliffe** (ratclifj@math.vanderbilt.edu), Department of Mathematics, 1326 Stevenson Center, Vanderbilt University, Nashville, TN 37240, and **Steven T. Tschantz** (tschantz@math.vanderbilt.edu), Department of Mathematics, 1326 Stevenson Center, Vanderbilt University, Nashville, TN 37240. *Hyperbolic structure on "link" complements in simply connected 4-manifolds.*

Let M be a noncompact finite-volume hyperbolic n-manifold. When $n = 3$, it is often the case that M is a link complement in the 3-sphere. Generalizing to $n = 4$, we exhibit a dozen M's that are topologically complements of tori and Klein bottles in the 4-sphere. Furthermore, we find infinitely many M's that are complements of tori and Klein bottles in simply-connected 4-manifolds with higher even Euler characteristic. All of the examples are finite covers of some of the 1149 unorientable hyperbolic 4-manifolds previously constructed by Ratcliffe and Tschantz. (Received January 24, 2005)