

Meeting: 1001, Evanston, Illinois, SS 21A, Special Session on Low-Dimensional Topology and Kleinian Groups

1001-57-365 **Anneke Bart** and **Kevin P. Scannell*** (scannell@slu.edu), Department of Mathematics, Saint Louis University, 221 N. Grand Blvd., St. Louis, MO 63101. *Cohomology constructions for hyperbolic knot and link complements.*

The primary examples of deformations of flat conformal structures on hyperbolic 3-manifolds are the bending deformations introduced in the 1970's by Thurston and Apanasov. A first-order deformation of this type is given by an element of first cohomology with coefficients in the Lie algebra of $SO(4, 1)$. In the case of bending, a natural representative cocycle can be chosen which is supported on the bending hypersurface.

We present new constructions of first-order deformations into $SO(4, 1)$ for certain hyperbolic knot and link complements. These cohomology classes are supported on piecewise totally geodesic two-complexes that are not isotopic to embedded totally geodesic surfaces; indeed, examples can be realized within manifolds containing no immersed totally geodesic surfaces. (Received August 31, 2004)