Kevin P. Scannell* (scannell@slu.edu) and **Anneke Bart** (barta@slu.edu), Department of Mathematics and Computer Science, Saint Louis University, St. Louis, Missouri, 63103. *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.