

**Meeting:** 998, Houston, Texas, SS 7A, Special Session on Low Dimensional Topology

998-57-408      **Mario Eudave-Munoz\*** ([mario@math.unam.mx](mailto:mario@math.unam.mx)), Instituto de Matematicas, UNAM, Circuito Exterior, Ciudad Universitaria, 04510 Mexico D.F., Mexico, and **Max Neumann-Coto** ([max@math.utexas.edu](mailto:max@math.utexas.edu)), Instituto de Matematicas, UNAM, Circuito Exterior, Ciudad Universitaria, 04510 Mexico D.F., Mexico. *Acylindrical surfaces in knot and link complements*. Preliminary report.

It is known that the genus of an acylindrical surface in a hyperbolic 3-manifold is bounded in terms of the volume. Here we show that no such bound exists depending on the Heegaard genus, and in the case of knots and links, no such bound exists depending on the tunnel number or the bridge number. In fact, for each  $g \geq 2$ , we show that there are tunnel number two knots, 3-bridge links, and 4 bridge knots which contain a closed acylindrical surface of genus  $g$ . It is also known that a given 3-manifold contains only finitely many acylindrical surfaces. We show that this does not happen for quasiFuchsian surfaces, for we give an example of a 3-bridge knot which contains infinitely many quasiFuchsian surfaces. It is conjectured that a hyperbolic knot in  $S^3$  cannot contain a closed totally geodesic surface, but there are links which contain that kind of surfaces. We show examples of 4 components links which contain a closed totally geodesic surface of genus 2. (Received March 02, 2004)