1009-53-4 **Harold Rosenberg***, University of Paris VII, Department of Mathematics, 2 place Jussieu, 75251 Paris France. *Minimal and constant mean curvature surfaces in homogeneous 3-manifolds.*

The theory of minimal surfaces in homogeneous 3-manifolds has greatly developed in recent years. Aside from the space forms $\mathbb{R}^3$, $\mathbb{H}^3$, and $\mathbb{S}^3$, the homogeneous 3-manifolds we consider include $\mathbb{S}^2 \times \mathbb{R}, \mathbb{H}^2 \times \mathbb{R}$, the Berger spheres, Heisenberg space, and the universal covering space of the unit tangent bundle of the hyperbolic plane.

These spaces are Riemannian fibrations over a 2-dimensional space form with geodesic (vertical) fibers. Rotation about vertical fibers are isometries and rotation by π about horizontal geodesics are also isometries. We use this to construct examples by solving Plateau problems for geodesic polygons with vertical and horizontal edges, and extending by symmetry about the edges.

We will describe examples of properly embedded minimal and constant mean curvature surfaces in these homogeneous spaces, and state some theorems concerning their global geometry and topology. Also we state several conjectures. (Received October 14, 2004)