“Classification of constant mean curvature spheres in metric Lie groups”

ABSTRACT: We will discuss recent progresses on generalizing the classical Hopf theorem that classifies constant mean curvature spheres in a space form (up to congruences) to the general framework of a simply-connected homogeneous 3-manifold. After the works of Abresch, Rosenberg, Daniel, Mira, and Meeks, this amounts to considering the case of an ambient 3-dimensional Lie group equipped with a left invariant metric. A rather complete proof will be explained in the case that the ambient Lie group is compact. This is a joint work with Bill Meeks, Pablo Mira, and Antonio Ros.