

Seminar/Talk

Cohomogeneity one hypersurfaces in space forms

Fernando Manfio

University of São Paulo, Brazil

Abstract: An interesting problem in submanifold theory is to study isometric immersions $f: M^n \rightarrow \mathbb{Q}_c^{n+p}$ of a connected complete Riemannian manifold of dimension n acted on by a closed connected subgroup of its isometry group $Iso(M^n)$. This study was initiated by Kobayashi in 1958, who proved that if $c = 0$, $p = 1$, and M^n is compact and homogeneous, i.e., $Iso(M^n)$ acts transitively on M^n , then $f(M^n)$ must be a round sphere. In this talk we will consider hypersurfaces $f: M^n \rightarrow \mathbb{Q}_c^{n+1}$ of a complete Riemannian manifold M^n on which a compact, connected subgroup G of $Iso(M^n)$ acts with maximal dimensional orbits of codimension one. We call f a *hypersurface of G -cohomogeneity one*. More precisely, we will review some results about Euclidean hypersurfaces and discuss a more recent work on such hypersurfaces in the hyperbolic space, where we provide a characterization if either $n \geq 3$ and M^n is compact, or $n \geq 5$ and the connected components of the set where the sectional curvature is constant and equal to -1 are bounded. The second part is a joint work with Felipe Guimarães and Carlos Olmos.

- **Dia:** 21 de Novembro de 2025, às 14h30min.
- **Local:** Sala de Reuniões, Departamento de Matemática, UBI