Título: Geometric Invariants of Fanning Curves

Palestrante: C. E. Durán

Resumo:

Curves on Grassmann manifolds often appear in geometry and dynamics through the following construction: let $\pi : E \to M$ be a fiber bundle over a manifold M and let $\phi : R \times E \to E$ be a flow. If $VE \subset TE$ denotes the vertical subbundle (i.e., the kernel of $D\pi$) and e is a point in E, $t \mapsto D\phi_{-t}(V_{\phi_t(e)}E)$ is a curve of subspaces of T_eE. For example, in the case of geometry of geodesics (Riemannian, Finslerian, Lorentzian) $E = T_0M$ is the punctured tangent bundle (i.e., without the zero section) of a manifold M and ϕ is the geodesic flow.

We study the local geometry of a generic class of curves in the (Lagrangian) Grassmannian (Lagrangian) of n-dimensional subspaces of R^{2n} that arise in the study of semi-sprays and Lagrangian flows, under the action of the linear (linear symplectic) groups.

Joint work with J. C. Álvarez Paiva.