X Workshop on Dynamical Systems
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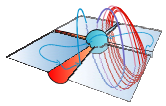

Invariant manifolds for some $3D$ polynomial differential systems

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Abstract: In this talk we present some results concerning the existence and shape of bi-dimensional manifolds for piecewise smooth vector fields in dimension three. By applying a small piecewise smooth perturbation of a linear differential equation filled by periodic orbits we observe the bifurcation of some objects as spheres, cylinders and tori. The approach is based on the averaging theory. We finish the talk by presenting two concrete examples of the results.