

Title: Lie-like structures on parallelizable manifolds.

Abstract: In this talk we will explore algebraic and geometric structures that arise on parallelizable manifolds. Given a parallelizable manifold \mathbb{L} , there exists a global trivialization of the tangent bundle, which defines a map $\rho_p : \mathfrak{L} \rightarrow T_p\mathbb{L}$ for each point $p \in \mathbb{L}$, where \mathfrak{L} is some vector space. This allows us to define a particular class of vector fields, known as fundamental vector fields, that correspond to each element of \mathfrak{L} . Furthermore, flows of these vector fields give rise to a product between elements of \mathfrak{L} and \mathbb{L} , which in turn induces a local loop structure (i.e. a non-associative analog of a group). Furthermore, we also define a generalization of a Lie algebra structure on \mathfrak{L} . We will describe the properties and applications of these constructions.