The University of Texas Rio Grande Valley
School of Mathematical & Statistical Sciences

Brownsville Seminar

Lie-like structures on parallelizable manifolds.

Speaker: Sergey Grigorian

Abstract:

In this talk we will explore algebraic and geometric structures that arise on parallelizable manifolds. Given a parallelizable manifold L, there exists a global trivialization of the tangent bundle, which defines a map $\rho_p : \mathrm{l} \to T_p\mathrm{L}$ for each point $p \in \mathrm{L}$, where 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 l. Furthermore, flows of these vector fields give rise to a product between elements of l and 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 l. We will describe the properties and applications of these constructions.

Coffee and cookies will be provided

Talk time: 1:30-2:30 PM
Date: October 6, 2023
Talk location: BLHSB 1.316 and in Zoom https://utrgv.zoom.us/j/83585846705

For further information or for special accommodations, please contact Dr. Alexey Glazyrin via email alexey.glazyrin@utrgv.edu. More information about the seminar talks is available at the website https://www.utrgv.edu/math/news-events/seminars/brownsville/index.htm.