

A fibration on the fundamental infinity groupoid

Jānis Lazovskis

GGTDS

2019-04-17

Abstract: There is a pair of natural functors from the category of vector bundles to the category of manifolds to the category of categories, the second of which is a fibration. We will interpret these functors through the fundamental groupoid and generalize to their higher dimensional analogues.

0.1 Intro

Fundamental group. Fundamental groupoid. Fundamental infinity groupoid.

Vector bundle motivator.

Fibration in general. Fibration in vector bundle example.

0.2 Stratifications

Stratification. Entrance *path*. Generalize to $\text{Sing}_A(X)$.

$\text{Ran}(M)$. Point counting stratification. It's conical.

0.3 Construction

Philosophy: construct the fiber, then straighten.

Definition of the fiber, existence / well-definedness.

Existence of straightening, which is a fibration.