On the Thom Isomorphism for Groupoid-Equivariant Representable K-theory

Zachary Garvey

Abstract

This thesis proves a general Thom Isomorphism in groupoid-equivariant KK-theory. Through formalizing a certain pushforward functor, we contextualize the Thom isomorphism to groupoid-equivariant representable K-theory with various support conditions. Additionally, we explicitly verify that a Thom class, determined by pullback of the Bott element via a generalized groupoid homomorphism, coincides with a Thom class defined via equivariant spinor bundles and Clifford multiplication. The tools developed in this thesis are then used to generalize a particularly interesting equivalence of two Thom isomorphisms on TX, for a Riemannian $\mathcal{G}$-manifold X.