Making K-theory combinatorial

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Abstract

Graduate students are welcome! I will begin with the basic definition of K-theory and equivariant K-theory, involving vector spaces and vector bundles. I will illustrate what the ring is by working through two examples: the K-theory of a point, and the equivariant K-theory of a point. After that, I will consider the case in which a compact torus (a product of circles) acts on a manifold in a specific and restricted way, and explain how the equivariant K-theory of these objects can be turned into a combinatorial "rule". Time permitting, I will present more sophisticated examples, including an open problem.

Keywords: K-theory,manifold.