Graded manifolds and n-fold vector bundles

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Abstract

A graded manifold of type Δ is a generalization of the notion of a graded manifold of degree n and an n-fold vector bundle. Here Δ is a certain finite weight system. Graded manifolds were used for instance by P. Ševera, D. Roytenberg, Li-Bland and H. Bursztyn in the context of Lie and Courant algebroids.

Our talk is devoted to a description of our recent result about an equivalence between the category of graded manifolds of type Δ and a subcategory of the category of n-fold vector bundles. This result is essentially combinatorial in nature. Instead of working with manifolds and iterated bundles, we deal with the weight system Δ and its combinatorics.

We will give a short overview of the notion of Lie and Courant algebroids, then we will consider some examples of graded manifolds of type Δ. In we have time we will prove the theorem about equivalence in a particular case.