

Announcement

## Seminar on Deformation Quantization

**07.05.2021 at 2PM CEST**

<https://uni-wuerzburg.zoom.us/j/92529190594?pwd=WkJvR1o1QUdldUNSSjFJbHB4c0Z0dz09>

JAN VYSOKÝ (CZECH TECHNICAL UNIVERSITY IN PRAGUE)

### Introduction to Graded Manifolds

A need for a geometrical theory with integer graded coordinates arose both in geometry (Courant algebroids, Poisson geometry) and physics (AKSZ and BV formalism). Based on the approach of Berezin-Leites and Kostant to supermanifolds,  $\mathbb{Z}$ -graded manifolds are usually defined as (graded) locally ringed spaces, that is certain sheaves of graded commutative algebras over (second countable Hausdorff) topological spaces, locally isomorphic to a suitable “local model”.

This approach works with no major issues for non-negatively (or non-positively) graded manifolds, which is sufficient for most of the applications. However; if one tries to include coordinates of both positive and negative degrees, issues appear on several levels. This was addressed recently by M. Fairon by extending the local model sheaf. Interestingly, this modification creates a new subtle issue on the level of  $\mathbb{Z}$ -graded linear algebra.

This talk intends to point out the aforementioned issues and to offer the modifications required to obtain a consistent theory of  $\mathbb{Z}$ -graded manifolds with coordinates of an arbitrary degree.

Invited by Stefan Waldmann