Announcement

Seminar on Deformation Quantization and Geometry

18. 7. 2025 at 14:15

Seminarroom SE 41

Ioan Marcut (Universität zu Köln)

Closed pseudogroups and their sheaf of Lie algebras

The main goal of this talk is to introduce closed pseudogroups and their associated sheaf of Lie algebras. For this, the weak C-infinity topology Whitney on the sheaf of smooth sections of a fibre bundle will be discussed. This is used to define closed subsheaves, which generalize the sheaf of solutions to a PDE. The topology on the sheaf of smooth sections has certain particularities, which yields interesting characterizations of closed subsheaves. Finally, the main result of this talk it that closed pseudogroups admit a closed sheaf of Lie algebras, which could be seen as an analog of the Closed-subgroup theorem of Cartan and van Neumann.

This work is part of a larger project, on rigidity of solutions to a PDE with symmetries, and was started in collaboration with Roy Wang. An early version of the results are contained in the PhD thesis of Roy Wang, available here: https://arxiv.org/abs/1712.00808.

Invited by Madeleine Jotz