

Announcement

Seminar on Deformation Quantization and Geometry

25. 4. 2025 at 14:00 s.t.

Seminarroom SE 31

ANNE GRÜNBECK (JMU WÜRZBURG)

Foliated principal bundles and obstructions

The main source for my Master's thesis was the book "Foliated Bundles and Characteristic Classes" by F. W. Kamber and P. Tondeur. It deals with horizontal, compatible foliations on principal bundles. My goal was to generalise Kamber and Tondeur's results to compatible foliations on principal bundles, but allowing as well for some "vertical directions". In doing so, we also obtain a more general result on the existence of a principal foliation with a prescribed projection on the base space of the principal bundle.

In the presentation, I will talk about principal foliations, their interactions with principal connections, and with structure group reductions of the underlying principal bundle. We will consider the structural requirements that have to be met by the vertical part of a principal foliation. Using this, we find a characteristic homomorphism producing characteristic classes that can be interpreted as obstructions to a principal foliation with a prescribed vertical direction and a prescribed base.

Invited by Madeleine Jotz