Julius-Maximilians-
UNIVERSITÄT
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MUΦX
Lehrstuhl X

Announcement

Seminar on Deformation Quantization

9. 4. 2021 at 10AM (!) CEST

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

Chenchang Zhu (Univ. Göttingen)

Classifying space BG as a (2-shifted) symplectic stack

It is probably well known to people who know it well that BG carries a sort of symplectic structure, if the Lie algebra of G is quadratic Lie algebra. In this talk, we explore various differential-geometric (1-group, 2-group, double-group) models to realise this (2-shift) symplectic structure in concrete formulas and show the equivalences between them.

In the infinite dimensional models (2-group, double-group), Segal's symplectic form on based loop groups turns out to be additionally multiplicative or almost so. These models are equivalent to a finite dimensional model with Cartan 3-form and Karshon-Weinstein 2-form via Morita Equivalence. All these forms give rise to the first Pontryagin class on BG. Moreover, they are related to the original invariant pairing on the Lie algebra through an explicit integration and Van Est procedure. Finally, as you might have guessed, the associated String group $BString(G)$ may be seen as a prequantization of this symplectic structure. From the math-physics point of view, what is behind is the Chern-Simons sigma model. This is a joint work with Miquel Ten Cueca.

Invited by Stefan Waldmann