Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

MUΦX
Lehrstuhl X

Announcement

Seminar on Deformation Quantization and Geometry

25. 7. 2025 at 14:00 c.t.

Seminarroom SE 31

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Extension of the Dorfman Bracket to the Bigraded Exterior Algebra of Courant Algebroids

Phase spaces of classical mechanical systems are modelled by symplectic or Poisson manifolds. In many situations, the dynamics of a system are constrained to a submanifold, where the non-degenerateness of the symplectic form and the Poisson bivector field might get lost. In this case, Dirac structures provide a setting in which presymplectic and Poisson structures can be discussed in a uniform manner. A crucial feature of a Dirac structure is that it is integrable with respect to a certain bracket, namely either the Courant or the Dorfman bracket. This concept can further be brought into a multisymplectic setting, allowing for a mathematical formulation of field theories. For this purpose, there are several approaches to extend the Courant and Dorfman bracket to a higher degree setting, which leads to the question of whether there is a uniform bracket on the bigraded exterior algebra of Courant algebroids that recover the individual configurations existing so far.

Invited by Stefan Waldmann