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On Dubrovin-Novikov brackets

Monday, June 3, 2024 9:30 AM (50 minutes)

Dubrovin and Novikov initiated the study of local homogeneous differential-geometric Poisson brackets of arbitrary degree k in their seminal 1984 paper. Despite several results in low degree, very little is known about their structure for arbitrary k. After an introduction to the topic we report on our recent results on the structure of DN brackets of degree k. We show that certain linear combinations of the coefficients of a DN bracket define k connections which are all flat and that the Poisson cohomology of a DN bracket is related with the Chevalley-Eilenberg cohomology of a Lie algebra which is naturally associated with the bracket. Joint work with M. Casati.

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