

Courant-Nijenhuis algebroids

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Abstract

We define Courant-Nijenhuis algebroids using the formalism of generalized derivations on vector bundles. From this approach, we also introduce a definition of Dirac-Nijenhuis structures which recovers the Poisson-Nijenhuis and presymplectic-Nijenhuis structures introduced by Magri and Morosi in [2] as examples when the Courant algebroid is the standard bundle $TM \oplus T^*M$ over M . Moreover, we revisit the theory of Manin triples for Lie algebroids described in [1] and establish a relation between Lie-Nijenhuis bialgebroids [3], Courant-Nijenhuis algebroids and Dirac-Nijenhuis structures.

References

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- [3] T. Drummond: *Lie-Nijenhuis bialgebroids*. Preprint arXiv:2004.10900, 2020