

Hom-Lie bialgebras and their geometric generalization

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Abstract: In this talk, I will give a new definition of a hom-Lie bialgebra, which is different from the existing ones. Using the new definition, we can build up the Manin triple theory for hom-Lie algebras. Furthermore, hom-Lie bialgebras, Manin triples for hom-Lie algebras and matched pairs of hom-Lie algebras are equivalent. Along this approach, we restudy Hom-Lie algebroids and introduce the notion of a Hom-Lie bialgebroid. The double of a Hom-Lie bialgebroid is not a Hom-Lie algebroid anymore, but a Hom-Courant algebroid.