Hom-structures (Lie algebras, algebras, coalgebras, Hopf algebras) have been investigated in the literature recently.

The aim of the paper under review is to understand Hom-structures from the point of view of monoidal categories. This leads to the natural definition of monoidal Hom-algebras, Hom-coalgebras, etc. The authors construct a symmetric monoidal category, and then introduce monoidal Hom-algebras, Hom-coalgebras, etc. as algebras, coalgebras, etc. in this monoidal category. They prove that the category of modules over a monoidal Hom-bialgebra is monoidal. The remarkable thing is that they have to consider a category in which the associativity constraint is nontrivial.

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16T05 Hopf algebras and their applications
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