

Title: (m, n) -Hom-Lie algebras

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Let (H, β) be a monoidal Hom-Hopf algebra, and (A, α) an algebra in the (m, n) -Hom-Yetter–Drinfeld category $\tilde{\mathcal{H}}(\frac{H}{H}\mathcal{YD}(\mathcal{Z}))$, where $m, n \in \mathcal{Z}$ (the set of integers). In this paper, we introduce the notion of (m, n) -Hom-Lie algebra (i.e., Lie algebras in the category $\tilde{\mathcal{H}}(\frac{H}{H}\mathcal{YD}(\mathcal{Z}))$), and then prove that (A, α) can give rise to an (m, n) -Hom-Lie algebra with suitable Lie bracket when the braiding τ in $\tilde{\mathcal{H}}(\frac{H}{H}\mathcal{YD}(\mathcal{Z}))$ is symmetric on (A, α) . We also show that if also (A, α) is a sum of two (H, β) -commutative Hom-subalgebras, then $[A, A][A, A] = 0$.

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