

Title: Metric polynomial structures on generalized geometry

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In this document, we study the interaction between different geometric structures defined on the generalized tangent bundle $\mathbb{T}M := TM \oplus T^*M \rightarrow M$. Specifically, we study various generalized polynomial α -structures \mathcal{J} with respect to different metrics \mathcal{G} on $\mathbb{T}M$ when $\mathcal{J}^2 = \alpha Id$, $\mathcal{G}(\mathcal{J}\cdot, \mathcal{J}\cdot) = \varepsilon \mathcal{G}(\cdot, \cdot)$, for $\alpha, \varepsilon \in \{+1, -1\}$. Besides, we study the commutation or anti-commutation of generalized polynomial structures, showing that a generalized Kähler structure can be understood as a pair of commuting generalized almost complex structures.

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