

# Multiplicative multivector fields and forms on Lie groupoids

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Abstract:

We first present two formulas in which multiplicative multivector fields (abbr. to MVs) and multiplicative forms (abbr. to MFs) on Lie groupoids are decomposed, respectively, into the sum of two parts, and we call the data obtained characteristic pairs. Then for a quasi-Poisson groupoid, we show that the space of MFs, together with ordinary forms on the base manifold, admits a graded weak Lie 2-algebra. The quasi-Poisson structure further builds a morphism from the said graded weak Lie 2-algebra to the graded Lie 2-algebra of MVs studied by Bonechi-Ciccoli-Laurent-Gengoux-Xu. This is joint work with Zhuo Chen and Zhangju Liu.