Symmetry, Integrability and Geometry: Methods and Applications (SIGMA), 2017, vol.13

# Differential calculus on h-deformed spaces

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## Abstract

 We construct the rings of generalized differential operators on the h-deformed vector space of gl-type. In contrast to the q-deformed vector space, where the ring of differential operators is unique up to an isomorphism, the general ring of h-deformed differential operators Diff h, σ (n) is labeled by a rational function σ in n variables, satisfying an over-determined system of finite-difference equations. We obtain the general solution of the system and describe some properties of the rings Diff h, σ (n).

http://dx.doi.org/10.3842/SIGMA.2017.082

## Keywords

Differential operators, Poincaré-Birkhoff-Witt property, Reduction algebras, Representation theory, Rings of fractions, Universal enveloping algebra, Yang-Baxter equation

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