

Abstract:**Title:** Noether currents in noncommutative field theory

Noether currents are discussed in the framework of noncommutative field theory. Translation, dilatation symmetry and gauge local transformations are investigated from both the classes of ordinary and Grosse-Wulkenhaar noncommutative scalar and gauge field theories. Using noncommutative Ward identity operators, the Noether procedure is applied to find relevant globally conserved quantities even though their local conservation and gauge invariance are, quite often, explicitly violated. In space-space noncommutative geometry, it appears possible to obtain a locally conserved four vector energy momentum. Finally, making use of improvement procedures based on Moyal algebraic techniques, the local conservation of energy-momentum tensors (EMTs) can be recovered. Jackiw recipe for EMT gauge covariance correction reveals to be inefficient in Grosse-Wulkenhaar gauge theories.