1146-18-27   **Alexei Davydov*** (`davydov@ohio.edu`), Morton Hall, Department of Mathematics, Athens, OH 45701. *Twisted automorphisms and derivations of Hopf algebras.*

A twisted homomorphism of a bialgebra is a bialgebra homomorphism from the first into a Drinfeld twisting of the second. Twisted homomorphisms can be composed. Gauge transformations of twists, compatible with corresponding homomorphisms, give rise to gauge transformation of twisted homomorphisms, which behave nicely with respect to composition.

Twisted derivation of a bialgebra is an infinitesimal version of twisted automorphism. Twisted derivations naturally form a Lie algebra (the tangent algebra of the group of twisted automorphisms). Moreover this Lie algebra fits into a crossed module (tangent to the crossed module of twisted automorphisms). (Received December 08, 2018)