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A new type of cocyclic modules

For finite-dimensional Hopf algebras, anti-Yetter–Drinfeld modules are equivalent to modules over the anti-Yetter–Drinfeld algebra (a Galois object over the Drinfeld double). We propose a definition of the anti-Yetter–Drinfeld algebra that works for infinite-dimensional Hopf algebras. Again, each anti-Yetter–Drinfeld module is a module over such an algebra, but now there more modules over this algebra than anti-Yetter–Drinfeld modules. For the thus constructed more general type of modules, we define a cocyclic complex with coefficients in such a module.

Joint work with Gabriella Bohm.