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Stefaan Caenepeel* (scaenepe@vub.ac.be), Faculty of Engineering, Pleinlaan 2, 1050 Brussel, Belgium, and **Bojana Femic**. *Harrison cohomology for commutative Hopf algebroids*. Preliminary report.

We generalize Harrison's complex to commutative bialgebroids; this new cohomology unifies Amitsur cohomology and (generalized) Harrison cohomology; it can also be applied to develop Harrison cohomology for commutative weak Hopf algebras. We can give algebraic interpretations of the lower cohomology groups; from these we recover classical results such as the crossed product theorem, the Hilbert 90 theorem, and the normal basis theorem. This is joint work with Bojana Femic. (Received February 20, 2006)