1042-18-158 **Mitja Mastnak*** (mmastnak@math.uwaterloo.ca), Dept. of Math. and C.S., Saint Mary's University, Halifax, NS N2L3G1, Canada. *Extensions and Singer cohomology of Hopf algebras.*

Hopf algebras are extremely ubiquitous algebraic structures with applications in many branches of mathematics as well as physics. They first appeared in algebraic topology as cohomology rings of connected Lie groups and later H-spaces.

It is natural to think of building new algebraic objects from simpler structures, or to get information about the structure of complicated objects by decomposing them into simpler parts. Algebraic extension theories serve exactly that purpose, and the classification problem of such extensions is usually related to cohomology theories. In the case of Hopf algebras, the cohomology theory governing extensions is Singer cohomology. In the talk I will describe some tools for computing Singer cohomology and illustrate their usefulness on several examples. (Received August 18, 2008)