1067-20-1153 **Hans-Juergen Schneider*** (Hans-Juergen.Schneider@mathematik.uni-muenchen.de), Mathematisches Institut LMU, Theresienstrasse 39, 80333 Muenchen, Germany, and **Istvan Heckenberger** (i.heckenberger@googlemail.com), Philipps-Universitaet Marburg, Mathematik und Informatik, Hans-Meerwein-Strasse, 35032 Marburg, Germany. *Right coideal subalgebras of Nichols algebras and the Duflo order of the Weyl groupoid.*

This is a report on recent joint work with I. Heckenberger. The first main problem of the classification of pointed Hopf algebras is the structure of Nichols algebras over group algebras. We are studying systematically the Nichols algebra of a Yetter-Drinfeld module over any Hopf algebra (with bijective antipode) which is a finite direct sum of finite-dimensional irreducible Yetter-Drinfeld modules. In this general context in recent joint work with I. Heckenberger and N. Andruskiewitsch we define reflection maps and a Weyl groupoid. Under mild assumptions we associate a generalized root system (in the sense of Heckenberger and Yamane) to the Nichols algebra. Using these invariants it is possible to decide when the Nichols algebra is finite-dimensional. We obtain a coproduct formula which seems to be new even for the classical quantum groups. Then we describe the right coideal subalgebras of the Nichols algebra by words in the Weyl groupoid. As a special case we obtain a proof of a recent conjecture of Kharchenko which says that the number of right coideal subalgebras of the plus part of the quantum group of a semisimple Lie algebra is the order of the Weyl group. (Received September 19, 2010)