

Meeting: 1004, Bowling Green, Kentucky, SS 10A, Special Session on Hopf Algebras and Related Topics

1004-16-45 **Akira Masuoka*** (akira@math.tsukuba.ac.jp), Institute of Mathematics, University of Tsukuba, 305-8571 Tsukuba, Ibaraki, Japan. *Picard-Vessiot extensions of artinian simple module algebras.*

This is a joint work with Katsutoshi Amano. We pursue M. Takeuchi's Hopf algebraic approach [J. Algebra 122(1989), 481-509] to the Picard-Vessiot theory for differential equations, in order to involve the Picard-Vessiot extensions for difference equations as well. Differential fields and total difference rings are unified by artinian simple module algebras over a cocommutative pointed Hopf algebra which is smooth as a cocommutative coalgebra. (Received January 10, 2005)