1067-20-225   **Ellen M Ziliak*** (`eziliak@ben.edu`), 524 Truman Dr, Oswego, IL 60543, and **Alexander Hulpke**. *An Algorithm to Express Words as Conjugates of Relators.*

The goal of this talk will be to give a more efficient algorithm to rewrite a word in a finitely presented group as a product of conjugates of relators. This algorithm has a practical application for doing arithmetic in group extensions assuming the 2-cocycles are given. Current algorithms to do this rewriting use an augmeted coset table. Using an augmented coset table one quickly runs into difficulty in storing the table for large groups. This algoirthm will decrease the storage requirement by using properties of the Cayley Graph at run time. (Received August 09, 2010)