Algebra Seminar

Buchsteiner loops

Ales Drapal
Charles University, Prague

ABSTRACT: Buchsteiner loops are defined by the identity

$$x\backslash(xy.z) = (yz.x)/x$$

If Q is a Buchsteiner loop and N is the nucleus of Q, then Q/N is an abelian group of exponent four. If Q really contains an element of order 4 modulo N, then Q has be of order at least 64, and such Buchsteiner loops really exist. All Buchsteiner loops are G-loops, and a conjugacy closed loop is a Buchsteiner loop if and only if it is boolean modulo the nucleus. All Buchsteiner loops of nilpotency class two are conjugacy closed, and 32 is the least order for Buchsteiner loops that are not conjugacy closed. All such loops have been classified. There exists a Buchsteiner loop of order 128 that is of nilpotency class three, and has an abelian inner mapping group.

Monday, March 12, 2007, 1:40 – 2:30 pm,
Wachman 617