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Jonathan D.H. Smith* (jdhsmith@iastate.edu), Department of Mathematics, Iowa State University, Ames, IA 50011. *Affine triple systems and the Yang-Baxter Equation*. Preliminary report.

The (quantum) Yang-Baxter equation is a condition on automorphisms of tensor squares, corresponding to Type III Reidemeister moves in knot theory and representations of the braid group [1, p.67]. Affine triple systems are perfect matroid designs of rank 4 in which the 3-flats are affine planes of order 3 [2]. This talk will discuss the algebraic methods used to derive solutions of the Yang-Baxter equation from affine triple systems.

[1] V. Chari and A. Pressley, *A Guide to Quantum Groups*, Cambridge, 1994.

[2] H.P. Young, *Affine triple systems and matroid designs*, *Math. Z.* 132 (1973), 343-359. (Received August 10, 2015)