1067-17-1722 **Angela M. Brown*** (ambrown@uta.edu), Department of Mathematics, University of Texas at Arlington, P.O. Box 19408, Arlington, TX 76019. *Automorphisms on Albert-like Semifield Planes.* Preliminary report.

A semifield is a non-associative division ring. In 1958 Albert defined the "twisted fields" which are semifields with elements in $\mathbb{GF}(p^n)$ where p is prime and with multiplication defined by

$$x \circ y = xy^{p^m} - cx^{p^m}y$$

where $1 \leq m < n, c \neq a^{p^m-1}$ for $a \in \mathbb{GF}(p^n)$. In 1961 Albert further defined the "generalized twisted fields" similarly with a new product

$$x \circ y = xy - cx^{\alpha}y^{\beta}$$

where $\alpha, \beta \in$ Aut $(\mathbb{GF}(p^n)), c \neq x^{\alpha-1}y^{\beta-1}$ and $x, y \in \mathbb{GF}(p^n)$. We are taking this a step further by defining a new product

$$x \circ y = xy + Ax^{\alpha}y^{\beta} + Bx^{\beta}y^{\alpha}$$

where $\alpha \neq 1, \beta \neq 1, \alpha \neq \beta$ are automorphisms of $\mathbb{GF}(p^n)$ with $p \geq 3, n \geq 4$ and $A, B \in \mathbb{GF}(p^n)$, which adds one more term to Albert's previous generalization.

These algebraic structures can then be used to coordinatize projective planes. In our work we are looking at the types of automorphisms we obtain on the projective planes coordinatized by semifields with this product. (Received September 21, 2010)