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Heather Hunt Elfen*, Robert Morris University, 6001 University Blvd, Moon Township, PA 15108, and **Thomas Riedel** and **Prasanna Sahoo**. *A Functional Equation On Groups With An Involution Related To Quadratic Polynomials.*

Let G be a group and \mathbb{C} the field of complex numbers. Suppose $\sigma : G \rightarrow G$ is an involution on G . We present the central solution $f : G \times G \rightarrow \mathbb{C}$ of the functional equation

$$\begin{aligned} f(x_1\sigma y_1, x_2\sigma y_2) - f(x_1\sigma y_1, x_2) - f(x_1, x_2\sigma y_2) \\ = f(x_1y_1, x_2y_2) - f(x_1y_1, x_2) - f(x_1, x_2y_2) \end{aligned}$$

for all $x_1, x_2, y_1, y_2 \in G$ based upon solutions of the functional equations

$$\begin{aligned} f(xy) + f(x\sigma y) &= 2f(x) \\ f_1(xy) + f_2(x\sigma y) &= f_3(x) \end{aligned}$$

where $f, f_1, f_2, f_3 : G \rightarrow \mathbb{C}$. (Received September 21, 2015)