

1096-39-1652

Heather B Hunt* (hbhunt01@louisville.edu), University of Louisville, Department of Mathematics, 328 Natural Sciences Building, Louisville, KY 40292, and **Prasanna K Sahoo**. *A Generalized Linear Functional Equation Defined on Groups.*

Let G be any arbitrary group and \mathbb{C} the field of complex numbers. We will present all functions $f, g, h, k : G \times G \rightarrow \mathbb{C}$ that satisfy the functional equation

$$f(pr, qs) + g(ps, qr) = h(p, q) + k(r, s)$$

for all $p, q, r, s \in G$. In order to do so, we need the general solution of three important functional equations, namely,

$$f(pr, qs) + f(ps, qr) = 2f(p, q) + 2f(r, s) \quad \forall p, q, r, s \in G,$$

$$f(pr, qs) + f(ps, qr) = 2f(p, q) + f(r, s) + f(s, r) \quad \forall p, q, r, s \in G \quad \text{and}$$

$$f(pr, qs) - f(ps, qr) = f(r, s) - f(s, r) \quad \forall p, q, r, s \in G.$$

(Received September 16, 2013)