Title: On the quadratic functional equation on groups

Author(s): Peter de Place Friis and Henrik Stetkær

We study the solutions $f : G \to H$ of the quadratic functional equation on $G$, where $G$ and $H$ are groups, $H$ abelian. We show that any solution $f$ is a function on the quotient group $[G, [G, G]]$. By help of this we find sufficient conditions on $G$ for all solutions to satisfy Kannappan’s condition. We use this to derive explicit formulas for the solutions on various groups like, e.g., the $(ax + b)$-group and $GL(n, \mathbb{R})$.

Address:
Peter de Place Friis
Mathematics Department
Sullivan-Harrell 364
Box 150694
Jackson, MS 39210-0001
USA
E-mail: friis2003@yahoo.com

Address:
Henrik Stetkær
Department of Mathematical Sciences
University of Aarhus
Building 530, Ny Munkegade
DK-8000 Aarhus C
Denmark
E-mail: stetkaer@imf.au.dk