

**Year: 2006****Vol.: 69****Fasc.: 1-2****Title:** On Stetkær type functional equations and Hyers–Ulam stability**Author(s):** Bouikhalene Belaid and Elqorachi Elhoucien

Let G be a locally compact group, K a compact subgroup of morphisms of G , $\chi : K \longrightarrow \{z \in \mathbb{C} \mid |z| = 1\}$ a continuous homomorphism and μ a K -invariant bounded measure on G . In this paper we study functional equations of the form

$$\int_G \int_K f(xtk \cdot y) \overline{\chi}(k) dk d\mu(t) = g(x)h(y), \quad x, y \in G,$$

in which $f, g, h \in C_b(G)$ are unknown functions. These equations may be viewed as a generalization of the functional equations considered by Stetkær in many of his works. We show how the solutions g and h are closely related to the solutions of Badora's functional equation solved in [4] and [13]. We treat examples and we give some applications. The case where G is a Lie group is considered. Furthermore, we investigate the Hyers–Ulam stability problem of these functional equations.

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