

FUNDAMENTAL STABILITIES OF GENERALIZED COMPOSITE
FUNCTIONAL EQUATIONS IN NON-ARCHIMEDEAN SPACES

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Abstract. In this paper, we introduce a new generalized composite functional equation of the form

$$f\left(kf(x_1) - \sum_{i=2}^{k+1} f(x_i)\right) + kf(x_1) + \sum_{i=2}^{k+1} f(x_i) = \sum_{i=2}^{k+1} f(x_1 + x_i) + \sum_{i=2}^{k+1} f(x_1 - x_i),$$

for any real $k \in \mathbb{R}^+ \setminus \{0\}$, and prove its fundamental stabilities in non-Archimedean normed spaces.

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