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ON THE GENERALIZED HYERS–ULAM STABILITY OF QUARTIC MAPPINGS IN NON–ARCHIMEDEAN BANACH SPACES

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Abstract. Let X, Y are linear space. In this paper, we prove the generalized Hyers-Ulam stability of the following quartic equation

$$\sum_{k=2}^{n}\left(\sum_{i_1=2}^{k}\sum_{i_2=i_1+1}^{k+1}\cdots\sum_{i_{n-k+1}=i_{n-k}+1}^{n}\right)f\left(\sum_{i=1,i\neq i_1,\ldots,i_{n-k+1}}^{n}x_i-\sum_{r=1}^{n-k+1}x_{i_r}\right)+f\left(\sum_{i=1}^{n}x_i\right)$$
$$=2^{n-2}\sum_{1\leqslant i<j\leqslant n}(f(x_i+x_j)+f(x_i-x_j))-2^{n-5}(n-2)\sum_{i=1}^{n}f(2x_i)$$

($n\in\mathbb{N}$, $n\geqslant 3$) in non-Archimedean Banach spaces

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Paper JMI-09-48

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