ON HYERS–ULAM–RASSIAS STABILITY OF
A QUADRATIC FUNCTIONAL EQUATION

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Abstract. In this paper, we investigate the Hyers-Ulam-Rassias stability of a new quadratic functional equation

$$f(x+y+z+w) + 2f(x) + 2f(y) + 2f(z) + 2f(w)$$
$$= f(x+y) + f(y+z) + f(z+x) + f(x+w) + f(y+w) + f(z+w).$$

Moreover, the stability results will be applied to the study of an interesting asymptotic property of the quadratic function.

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