

数学

广义函数空间上Wilson型函数方程的稳定性

李林松, 崔丽英

延边大学 理学院数学系, 吉林 延吉 133002

摘要:

利用热方程的核, 通过广义函数正则化的方法给出Wilson函数方程在广义函数空间(包括缓增广义函数空间、傅里叶超函数空间和Gelfand-Shilov广义函数空间)上的Hyers-Ulam稳定性, 并证明了在广义函数空间上Wilson函数方程的稳定性具有与一般函数空间上类似的结果.

关键词: Wilson函数方程; 广义函数; 热方程的核; Hyers-Ulam稳定性

Stability of Wilson Functional Equation in the Spaces of Generalized Functions

LI Lin song, CUI Li ying

Department of Mathematics, College of Science, Yanbian University, Yanji 133002, Jilin Province, China

Abstract:

By means of heat kernel and the approach of regularizing generalized functions, Hyers-Ulam stability of Wilson functional equation was mainly studied in the spaces of generalized functions such as the Schwartz tempered distributions, Fourier hyperfunctions and Gelfand-shilov generalized functions, showing that the result of the stability of Wilson functional equation in generalized functions is similar to that in the usual functional spaces.

Keywords: Wilson functional equation; generalized functions; heat kernel; Hyers-Ulam stability

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通讯作者: 李林松

作者简介:

作者Email: liis@ybu.edu.cn

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