

New Progresses

Since there are a lot of errors in the original version of the book, to save the readers' time, we recompile the book with larger fonts.

Since the book was published twenty years ago, it is worth to mention some progresses during these long period.

The first progress is on the following topic.

1. Hardy-type inequalities

From the author's home page, one can find the following articles.

Articles:

- [99] Bilateral Hardy-type inequalities, *Acta Math. Sin. Eng. Ser.* 2013, 29:1, 1–32.
- [105] The optimal constant in Hardy-type inequalities, *Acta Math. Sin., Eng. Ser.* 2015, 31(5): 731–754
- [106] Progress on Hardy-type inequalities, Chapter 7 in the book “Festschrift Masatoshi Fukushima”, 131–142. Eds: Zhen-Qing Chen, Niels Jacob, Masayoshi Takeda, Toshihiro Uemura, World Scientific 2015

Popular science works:

- [15] 双边Hardy不等式及其几何应用《数学传播》《数学通报》

In the discrete context, one can find the following two articles by

Zhong-Wei Liao

- [1] Discrete Hardy-type Inequalities, 2015.
- [2] Discrete Weighted Hardy Inequalities with Different Kinds of Boundary Conditions, 2016.

The second progress we want to mention is as follows.

2, Economic Optimization

From Chapter 10 of the book, one sees that to the topic we have worked for quite a long period. Very luckily, with four colleagues: Ying-Chao Xie, Bin Chen, Qin Zhou, and Ting Yang at Jiangsu Normal University, we have obtained a new theory on the topic. Actually, a monograph in Chinese has been published this year. Moreover, an English survey article on the theoretical part of the book, entitled “Hua-Chen New

Theory of Economic Optimization”, authored by Bin Chen, Ying-Chao Xie, Ting Yang and Qin Zhou, has distributed at arXiv.org: 2504.19134

For more information on the new progress of this topic, refer to the author’s homepage:

<http://math0.bnu.edu.cn/~chenmf>