Results Math (2020) 75:31
© 2020 Springer Nature Switzerland AG
1422-6383/20/010001-3
published online January 18, 2020
https://doi.org/10.1007/s00025-020-1155-z

Results in Mathematics

Correction

Correction to: Quantitative Approximation by Nonlinear Picard–Choquet, Gauss–Weierstrass–Choquet and Poisson–Cauchy–Choquet Singular Integrals

Sorin G. Gal

Correction to: Results Math (2018) 73:92
https://doi.org/10.1007/s00025-018-0852-3

Abstract. Corrigendum to Results Math. (73)(2018), no. 3, Art. 92, 23 pp. Concerning the examples in Remark 4.3 and Remark 5.4, I correct a few calculations, but which do not influence the conclusions in these remarks.

Mathematics Subject Classification. 41A36, 41A25, 28A10, 28A12, 28A25.

Keywords. Submodular set function, Nonlinear Choquet integral, Picard–Choquet operators, Gauss–Weierstrass–Choquet operators, Poisson–Cauchy–Choquet operators.

Introduction

I correct a few calculations in Remarks 4.3 and 5.4 in [1], but which do not influence the conclusions of these remarks, as follows.

On page 14, line 5 from below, the equality $W_{t,\mu_{t,x}}(f)(x) = f(x+t^2)$ must be changed to $f(x) \leq W_{t,\mu_{t,x}}(f)(x) \leq f(x+t^2)$.

The original article can be found online at https://doi.org/10.1007/s00025-018-0852-3.

On page 14, line 3 from below (i.e. in relation (3)), the sign "=" must be changed to "≤".

On page 15, the whole line 18 from above must be replaced by

$$\begin{aligned} W_{t,\mu_{t,x}}(f)(x) &= \int_0^{f(x+t^2)} \sup\{e^{-(s-x)^2/t^2}; s \in \mathbb{R}, f(s)e^{-(s-x)^2/t^2} \geq \alpha\} d\alpha \\ &\leq f(x+t^2). \end{aligned}$$

Then, after this line must be inserted the following two formulas

$$\begin{aligned} W_{t,\mu_{t,x}}(f)(x) &= \int_0^{f(x+t^2)} \sup\{e^{-(s-x)^2/t^2}; s \in \mathbb{R}, f(s)e^{-(s-x)^2/t^2} \geq \alpha\} d\alpha \\ &\geq \int_0^{f(x)} \sup\{e^{-(s-x)^2/t^2}; s \in \mathbb{R}, f(s)e^{-(s-x)^2/t^2} \geq \alpha\} d\alpha \\ &= \int_0^1 1 d\alpha = f(x). \end{aligned}$$

On page 20, line 5 from below, the equality $Q_{t,\mu_{t,x}}(f)(x) = f(x+t^2)$ must be changed to $f(x) \leq Q_{t,\mu_{t,x}}(f)(x) \leq f(x+t^2)$.

On page 20, line 3 from below (i.e. in relation (6)), the sign "=" must be changed to "≤".

On page 21, the whole line 10 from below must be replaced by

$$\begin{aligned} Q_{t,\mu_{t,x}}(f)(x) &= \int_0^{f(x+t^2)} \sup\left\{\frac{1}{|s-x|^2/t^2+1}; s \in \mathbb{R}, f(s) \cdot \frac{1}{|s-x|^2/t^2+1} \geq \alpha\right\} d\alpha \\ &\leq f(x+t^2). \end{aligned}$$

Then, after this line must be inserted the following three lines

$$\begin{aligned} Q_{t,\mu_{t,x}}(f)(x) &= \int_0^{f(x+t^2)} \sup\left\{\frac{1}{|s-x|^2/t^2+1}; s \in \mathbb{R}, f(s) \cdot \frac{1}{|s-x|^2/t^2+1} \geq \alpha\right\} d\alpha \\ &\geq \int_0^{f(x)} \sup\left\{\frac{1}{|s-x|^2/t^2+1}; s \in \mathbb{R}, f(s) \cdot \frac{1}{|s-x|^2/t^2+1} \geq \alpha\right\} d\alpha \\ &= \int_0^{f(x)} 1 d\alpha = f(x). \end{aligned}$$

Reference

[1] Gal, S.G.: Quantitative approximation by nonlinear Picard–Choquet, Gauss–Weierstrass–Choquet and Poisson–Cauchy–Choquet singular integrals. Res. Math. **73**(3), 23 (2018). Art. 92

Sorin G. Gal
Department of Mathematics and Computer Science
University of Oradea
Universitatii 1
410087 Oradea
Romania
e-mail: galso@uoradea.ro