

Electronic Journal of Qualitative Theory of Differential Equations

2019, No. 44, 1–2; https://doi.org/10.14232/ejqtde.2019.1.44 www.math

www.math.u-szeged.hu/ejqtde/

Corrigendum to "Nontrivial solutions for fractional q-difference boundary value problems" [Electron. J. Qual. Theory Differ. Equ. 2010, No. 70, 1–10]

Rui A. C. Ferreira [™]

Grupo Física-Matemática, Faculdade de Ciências, Universidade de Lisboa Av. Prof. Gama Pinto, 2, 1649-003 Lisboa

> Received 3 May 2019, appeared 27 June 2019 Communicated by Paul Eloe

Abstract. We correct a typo that was observed now in [*Electron. J. Qual. Theory Differ. Equ.* **2010**, No. 70, 1–10].

Keywords: Fractional *q*-difference equations, boundary value problem, nontrivial solution.

2010 Mathematics Subject Classification: 39A13, 34B18, 34A08.

1 Corrigendum

In [1], page 8, a constant N was defined and used to prove [1, Theorem 3.6]. Unfortunately, there is a typo in this definition. Indeed, let*

$$N = \left(\int_{\tau_1}^{\tau_2} G(r, qt) d_q t\right)^{-1}, \quad \text{with } r \in (0, 1).$$
 (1.1)

Then, we know from [1, Lemma 3.4] that N > 0. Moreover, line 4 of page 9 should read:

$$||Ty|| = \max_{0 \le x \le 1} \int_0^1 G(t, qt) f(t, y(t)) d_q t \ge N r_1 \int_{\tau_1}^{\tau_2} G(r, qt) d_q t = ||y||.$$

In conclusion, the main result in [1], namely Theorem 3.6, holds with N given by (1.1).

Acknowledgements

Rui A. C. Ferreira was supported by the "Fundação para a Ciência e a Tecnologia (FCT)" through the program "Investigador FCT" with reference IF/01345/2014.

[™]Email: raferreira@fc.ul.pt

^{*}In [1] N was written as $N = \left(\int_{\tau_1}^{\tau_2} G(qt,qt) d_q t\right)^{-1}$.

References

[1] R. A. C. Ferreira, Nontrivial solutions for fractional *q*-difference boundary value problems, *Electron. J. Qual. Theory Differ. Equ.* **2010**, No. 70, 1–10. https://doi.org/10.14232/ejqtde.2010.1.70; MR2740675