

MR2832086 (2012k:26013) 26B40 (26A46 26E15 46E35)**Ranjbar-Motlagh, Alireza (IR-SHAR)****An integral type characterization of constant functions on metric-measure spaces. (English summary)***J. Math. Anal. Appl.* **385** (2012), no. 1, 194–201.

The author approximates a measurable function by Lipschitz functions, and generalizes a characterization of constant functions to metric-measure spaces. Then he establishes a necessary and sufficient condition in order that any measurable function, which satisfies an integrability condition, is constant a.e. The result is interesting.

Reviewed by *Yuming Xing*

References

1. M. Bourdon, H. Pajot, Cohomologie l_p et espaces de Besov, *J. Reine Angew. Math.* 558 (2003) 85–108. [MR1979183 \(2004e:20073\)](#)
2. H. Brezis, How to recognize constant functions. A connection with Sobolev spaces, *Uspekhi Mat. Nauk* 57 (4) (2002) 59–74 (in Russian), translation in: *Russian Math. Surveys* 57 (4) (2002) 693–708. [MR1942116 \(2003m:46047\)](#)
3. L.C. Evans, R.F. Gariepy, *Measure Theory and Fine Properties of Functions*, Stud. Adv. Math., CRC Press, Boca Raton, FL, 1992. [MR1158660 \(93f:28001\)](#)
4. A. Grigor'yan, Heat kernels and function theory on metric measure spaces, in: *Heat Kernels and Analysis on Manifolds, Graphs and Metric Spaces*, Paris, 2002, in: *Contemp. Math.*, vol. 338, Amer. Math. Soc., Providence, RI, 2003, pp. 143–172. [MR2039954 \(2005c:60096\)](#)
5. T. Heikkinen, P. Koskela, H. Tuominen, Sobolev-type spaces from generalized Poincaré inequalities, *Studia Math.* 181 (1) (2007) 1–16. [MR2317850 \(2008g:46051\)](#)
6. J. Heinonen, *Lectures on Analysis on Metric Spaces*, Springer-Verlag, New York, 2001. [MR1800917 \(2002c:30028\)](#)
7. K. Pietruska-Pałuba, Heat kernels on metric spaces and a characterisation of constant functions, *Manuscripta Math.* 115 (3) (2004) 389–399. [MR2102059 \(2005i:60148\)](#)
8. A. Ranjbar-Motlagh, Analysis on metric-measure spaces, Ph.D. thesis, New York University, 1998. [MR2697437](#)
9. A. Ranjbar-Motlagh, Poincaré inequality for abstract spaces, *Bull. Aust. Math. Soc.* 71 (2) (2005) 193–204. [MR2133404 \(2006b:26016\)](#)
10. A. Ranjbar-Motlagh, Generalized Stepanov type theorem with applications over metric-measure spaces, *Houston J. Math.* 34 (2) (2008) 623–635. [MR2417413 \(2009g:46066\)](#)
11. A. Ranjbar-Motlagh, Generalized Rademacher-Stepanov type theorem and applications, *Z. Anal. Anwend.* 28 (3) (2009) 249–275. [MR2506360 \(2010i:58009\)](#)

Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

© Copyright American Mathematical Society 2012, 2013