ON THE DIFFERENTIAL STRUCTURE OF METRIC MEASURE SPACES AND APPLICATIONS

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We will discuss the possibility of analyzing the duality relations between differentials and gradients of Sobolev functions defined on arbitrary metric measure spaces. As a first application we derive the definition of distributional Laplacian and show that on spaces with Ricci curvature bounded from below the Laplacian of the distance function has the standard sharp comparison properties.

References

[1] On the differential structure of metric measure spaces and applications, submitted paper `arxiv.org/abs/1205.6622`