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Christopher S. Camfield* (camfieldc@kenyon.edu), Department of Mathematics, Kenyon College, Gambier, OH 43022. *A Look at the BV space as an Extension of the (1,1)-Newtonian Space in Metric Measure Spaces*. Preliminary report.

We will look at the space of functions of bounded variation in a metric measure space as defined by Miranda Jr., and show its relationship to the (1,1)-Newtonian space defined by Shanmugalingam. In Euclidean spaces, the BV space is an extension of the (1,1)-Sobolev space with $W^{1,1}$ being the subspace of functions whose variation measure is absolutely continuous with respect to the Lebesgue measure. We will show that the analogous relationship holds in metric measure spaces with doubling measures supporting a (1,1)-Poincaré Inequality. (Received January 26, 2010)