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Marshall Williams* (mcwill@umich.edu). *Metric currents and differentiable structures.*

In 2000, Ambrosio and Kirchheim defined currents in metric spaces, generalizing the earlier theory of Federer and Fleming in \mathbb{R}^n . Around the same time, Cheeger showed that a large class of spaces admit a generalized form of Rademacher's differentiation theorem. We will discuss the implications of Cheeger's theorem for the metric currents of Ambrosio and Kirchheim, including an application to Heisenberg groups. (Received February 03, 2009)