

1139-35-340

Jeff Calder* (jcalder@umn.edu), School of Mathematics, University of Minnesota, Minneapolis, MN 55455. *The weighted p -Laplacian and semi-supervised learning.*

Semi-supervised learning refers to machine learning algorithms that make use of both labeled data and unlabeled data for learning tasks. Examples include large scale nonparametric regression and classification problems, such as predicting voting preferences of social media users, or classifying medical images. In this talk, we will present some new results on continuum limits for graph-based semi-supervised learning in the limit of infinite unlabeled data and finite labeled data. We show that the continuum limits correspond to solving a weighted p -Laplace equation in the viscosity sense and are non-degenerate only when $p > d$. (Received February 15, 2018)