1155-28-375 **Matthew Badger*** (matthew.badger@uconn.edu). *Anisotropic Linear Approximation, Square Functions, and Rectifiability of Measures.*

In geometric measure theory, we are interested in understanding the structure of a measure on a space through its interactions with canonical lower dimensional sets such as rectifiable curves or Lipschitz graphs. An important dichotomy arises between the rectifiable measures, which give all of their mass to lower dimensional sets, and purely unrectifiable measures, which vanish on every lower dimensional set. In recent years, the infusion of ideas from harmonic analysis has led to a renaissance of results by several groups of mathematicians, including a complete characterization of locally finite measures carried by or singular to rectifiable curves in joint work by myself and Raanan Schul. I will give an overview of these developments with an emphasis on ideas from harmonic analysis and discuss future challenges. (Received January 19, 2020)