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Coronizations and big pieces in metric spaces

We compare two ways to approximate a set E in a metric measure space X by a family of subsets $\mathcal{A}$ in X; namely coronizations by $\mathcal{A}$ and big pieces of sets in $\mathcal{A}$. Both are motivated by the work of David and Semmes in the context of uniform rectifiability in $\mathbb{R}^n$. Indeed, this work arose as an attempt to understand these notions in the setting of parabolic geometry in $\mathbb{R}^{n+1}$.

We show that, under some structural assumptions on E and sets in $\mathcal{A}$, if E admits a coronization by sets in $\mathcal{A}$ then E has big pieces of big pieces of sets in $\mathcal{A}$.

This is joint work with Simon Bortz, John Hoffman, Steve Hofmann, and Kaj Nyström.