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Quantitative decompositions of Lipschitz mappings

Given a Lipschitz map, it is often useful to chop the domain into pieces on which the map has simple behavior. For example, depending on the dimensions of source and target, one may ask for pieces on which the map behaves like a bi-Lipschitz embedding or like a linear projection. It is even more useful if this decomposition is quantitative, i.e., with bounds independent of the particular map or spaces involved. After surveying the question of bi-Lipschitz decomposition, we will discuss the more complicated case in which dimension decreases, e.g., for maps from $\mathbb{R}^3$ to $\mathbb{R}^2$. This is joint work with Raanan Schul, improving a previous result of Azzam-Schul.