Andrew T. Swift* (ats0@ou.edu). Distortion Bounds for Bi-Lipschitz Embeddings of Bundle Graphs into Banach Spaces.

Since Bourgain’s initiation of the infamous “Ribe Program” in Banach space theory, there have arisen many (Lipschitz) inequivalent characterizations of superreflexivity in terms of the non-equi-bi-Lipschitz embeddability of a family of finite graphs. Indeed, it has recently been shown that every regularly branching bundle graph can be used to generate such a family. And with each such characterization, there comes a bound on the distortion for the equi-bi-Lipschitz embeddability of the family of graphs into a non-superreflexive Banach space. Except for the specific case of binary diamonds, the best known bounds for families generated by a bundle graph come from a parameter that measures the “branchiness” of the base graph, and it is still unknown whether better bounds exist independently of this parameter. We will provide a walkthrough for the embedding of a bundle graph into $\ell_1$ to show how this parameter is used. (Received February 01, 2019)