Geometry of the separating curve graph

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Abstract: There are many graphs and complexes we can associate to a surface whose vertices are curves or collections of curves in the surface. A first example is the curve graph, which has a vertex for each isotopy class of curves, with edges corresponding to disjointness. These complexes have proved to be useful tools in studying mapping class groups and Teichmller spaces. Masur and Minsky, in 2000, gave a distance estimate for the mapping class group in terms of a sum of certain projections to the curve graphs of subsurfaces. We will present a result which gives a similar distance estimate for the separating curve graph, making use of the concept of hierarchical hyperbolicity defined by Behrstock, Hagen and Sisto.