1151-05-308 **Lauren Rose*** (rose@bard.edu), Bard College, 30 Campus Rd, Red Hook, NY 12504, and **Jeff Suzuki**. *Generalized Splines on Graphs with edge weights from a Euclidean Domain.*

Generalized splines on a graph G, with edge weights in a Euclidean Domain D, are vertex labelings such that if two vertices share an edge in G, the vertex labels are congruent modulo the edge weight. The set of all generalized splines on G is a free D-module of rank the number of vertices of G. We introduce two collapsing operations that allow us to reduce any graph to a single vertex. These operations correspond to a sequence of surjective maps between the associated spline modules, and lead to an explicit construction of a D-module basis in terms of the edge weights. We also solve an interpolation problem, i.e. given a partial vertex labeling, when can it can be extended to a generalized spline? (Received August 21, 2019)