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Northampton, MA 01063. *Generalized splines and GKM theory.*

Given a graph, we describe a way to build a ring which we call the ring of generalized splines, because it generalizes the usual construction of algebraic splines. These rings also generalize equivariant cohomology rings as constructed by GKM theory, a well-known construction in algebraic topology that uses tools from algebraic combinatorics. We discuss results in the theory of generalized splines together with open questions, including questions about the representations associated to the generalized splines of a graph. Time permitting, we will elaborate on the geometric motivation and context for this work, including important geometric representations of the symmetric group. (Received September 25, 2012)