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Plamen Simeonov* (simeonovp@uhd.edu), UHD, CMS, Suite 705 S, One Main Street, Houston, TX 77002, and **Ron Goldman** (rng@rice.edu), Houston, TX 77005. *Generalized Quantum B-Splines*. Preliminary report.

Generalized quantum splines are piecewise polynomials whose finite differences or generalized quantum derivatives agree up to some order at the joins. Just like classical and quantum splines, generalized quantum splines admit a canonical basis with compact support: the generalized quantum B-splines. We study generalized quantum B-spline bases and generalized quantum B-spline curves, using a very general variant of the blossom: the generalized quantum blossom. Applying the generalized quantum blossom, we develop algorithms and identities for generalized quantum B-spline bases and generalized quantum B-spline curves, including generalized quantum variants of the de Boor algorithms for recursive evaluation and generalized quantum differentiation, knot insertion procedures for converting from generalized quantum B-spline to piecewise generalized quantum Bezier form, and a generalized quantum variant of Marsden's identity. (Received December 05, 2012)