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**Maria Gillespie** (mgillespie@math.ucdavis.edu), **Graham Hawkes** (hawkes@math.ucdavis.edu) and **Wencin Poh** (wpoh@ucdavis.edu), Davis, CA 95616, and **Anne Schilling\*** (anne@math.ucdavis.edu), Department of Mathematics, One Shields Avenue, University of California, Davis, CA 95616. *Characterization of queer supercrystals.*

We provide a characterization of the crystal bases for the quantum queer superalgebra recently introduced by Grantcharov et al.. This characterization is a combination of local queer axioms generalizing Stembridge's local axioms for crystal bases for simply-laced root systems, which were recently introduced by Assaf and Oguz, with further axioms and a new graph  $G$  characterizing the relations of the type  $A$  components of the queer crystal. We provide a counterexample to Assaf's and Oguz' conjecture that the local queer axioms uniquely characterize the queer supercrystal. We obtain a combinatorial description of the graph  $G$  on the type  $A$  components by providing explicit combinatorial rules for the odd queer operators on certain highest weight elements. (Received January 02, 2019)