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**Benjamin W. Passer\*** (bpasser@uwaterloo.ca) and **Vern I. Paulsen.** *Approximation Properties of Matrix Convex Sets and Operator Systems.*

A matrix convex set  $X$ , by definition, is built up of many different matrix levels  $X_n$ . We show that the smallest and largest matrix convex sets over  $X_n$  do not necessarily approximate  $X$  to arbitrary precision as  $n$  approaches infinity. In particular, successful approximation corresponds to the lifting property and exactness of the corresponding operator system. (Received September 13, 2019)