1050-51-95 **Robert J. MacG. Dawson*** (rdawson@cs.stmarys.ca), Department of Mathematics and CS, Saint Mary's University, Halifax, NS B3H 3C3. *Some new Čebyšev sets in hyperspaces.*

A set in a metric space is said to have the *Čebyšev property* if every point of the space has a unique nearest neighbour in the set. This purely metric property is equivalent to convexity for (closed, nonempty) sets in Euclidean spaces; but even in other finite-dimensional Banach spaces it need not be.

We define a *hyperspace* to be a metric space, the points of which are compact sets of an underlying space. We will consider in particular the space $\mathcal{K}^n$ of compact convex sets in $\mathbf{R}^n$ with the Hausdorff metric

$$\varrho(A,B) := \max\{\max_{a\in A}\min_{b\in B} d(a,b), \max_{b\in B}\min_{a\in A} d(a,b)\} ,$$

and the space $\mathcal{O}^n$ of compact strictly convex sets with the same metric.

Various different examples of Čebyšev sets are known in these hyperspaces, but we have no unifying classification. In this paper we will present constructions that unify some previously known classes, although a general characterization remains elusive. (Received February 28, 2009)