

# Some hyperspaces of compact convex sets and their orbit spaces

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Let  $cc(\mathbb{R}^n)$  denote the hyperspace of all nonempty compact convex subsets of the Euclidean space  $\mathbb{R}^n$  endowed with the Hausdorff metric, and let  $cc(\mathbb{B}^n) = \{A \in cc(\mathbb{R}^n) \mid A \subset \mathbb{B}^n\}$ , where  $\mathbb{B}^n$  is the closed unit ball of  $\mathbb{R}^n$ . In this talk we will describe the topological structure of several geometrically defined subspaces of  $cc(\mathbb{R}^n)$  and  $cc(\mathbb{B}^n)$  and their orbit spaces under the natural action of the orthogonal group  $O(n)$ . Among them are the hyperspaces  $cb(\mathbb{B}^n) = \{A \in cc(\mathbb{B}^n) \mid \text{Int } A \neq \emptyset\}$  and  $\check{c}b(\mathbb{B}^n) = \{A \in cb(\mathbb{B}^n) \mid \check{C}(A) = \mathbb{B}^n\}$ , where  $\check{C}(A)$  denotes the circum-ball of  $A$ . We will also introduce some new models for the Banach–Mazur compacta  $BM(n)$  as a by-product. Related open problems will be discussed.

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