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Metrization of Idempotent Convex Compacta

Using a convenient subbase on the second hyperspace of a compactum with the Vietoris topology, we prove that the mapping that takes each closed non-empty subset A of an I -convex compactum X to its closed idempotent convex hull is continuous. This implies that each neighborhood of the diagonal $\Delta_X \subset X \times X$ contains an idempotent convex neighborhood. The main result is the theorem that the topology on an idempotent convex compactum X is determined by a family of idempotent convex pseudometrics (with one idempotent convex metric if X is metrizable).

Keywords: I -convex compactum, idempotent semimodule, locally convex space, Vietoris topology, metrization

MSC: 52A01, 52A30, 15A80, 46S99.