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**Topological and algebraic properties of the Sugeno integral**

*Abstract.* We shall introduce the Sugeno integral of an upper semi-continuous function from a compactum to a compact Hausdorff Lawson lattice with respect to a lattice-valued capacity, and its characterization and properties in comparison with characterizations and properties of the Lebesgue and the Choquet integrals. It will be shown that the Sugeno integral is unique in a family of fuzzy integrals that provides a functional representation of the monad of lattice-valued capacities.