Associating Linear and Nonlinear Operators

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1   Abstract

Any Dedekind complete Banach lattice E with a quasi-interior point e is lattice isomorphic to a space of continuous, extended real-valued functions defined on a compact Hausdorff space X. An orthogonally additive, continuous, monotonic, and subhomogeneous nonlinear operator $T : E \to \mathbb{R}$ is examined. In this case, the concept of integration is no longer valid, but a complete measure related to the nonlinear operator T is constructed. The linear operator associated with μ and other linear operators with similar properties are studied.