

On Segal's entropy

ANDRZEJ LUCZAK

Abstract. This paper is devoted to the investigation of Segal's entropy in semifinite von Neumann algebras. The following questions are dealt with: semicontinuity, the 'ideal-like' structure of the linear span of the set of operators with finite entropy, and topological properties of the set of operators with finite, as well as infinite, entropy. In our analysis, full generality is aimed at; in particular, the operators for which the entropy is considered are not assumed to belong to the underlying von Neumann algebra, instead, they are arbitrary positive elements in the space L^1 over the algebra.

Mathematics Subject Classification (2020): 46L53 (primary); 81P45, 62B15 (secondary).