

VARIATIONS ON COMPACT-FRIENDLINESS

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An operator B on an infinite-dimensional Banach lattice E is called **compact-friendly** if there exist three non-zero operators R, K , and C on E with R, K positive and K compact such that B commutes with R , and C is dominated by both R and K . Being a generalization of compact operators in the setting of vector lattices and ordered Banach spaces on which operators with various types of domination properties act, compact-friendly operators have proved to be useful as far as the invariant subspace problem is concerned, albeit very little is known about their structural properties. In the present talk, we will be interested in obtaining compact-friendly-like operators by strengthening or weakening the commutativity condition appearing in the above definition, and we will investigate the relation of these operators with the invariant subspace problem. As an instance, having showed that weak compact-friendliness is preserved under weak positive quasi-similarity, we will prove that two positive operators on an infinite-dimensional Banach lattice, one of which is weakly compact-friendly and the other is locally quasi-nilpotent at a non-zero vector, that are weakly positively quasi-similar have a common non-trivial closed invariant ideal.