INVARIANT SUBSPACES OF STRONGLY COMPACT-FRIENDLY OPERATORS

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Abstract: Let B and T be two positive operators on a Banach lattice such that B is compact-friendly and T is locally quasi-nilpotent. Introducing the concept of positive quasi-similarity, we will prove that T has a non-trivial closed invariant subspace provided B is positively quasi-similar to T. This gives an affirmative answer to a problem of Abramovich, Aliprantis and Burkinshaw in [1] with the commutativity condition replaced by the positive quasi-similarity of the corresponding operators. The notion of strong compact-friendliness will then be introduced along with its basic features and the existence of invariant subspaces of operators of this kind will be discussed.

This is joint work with Mert Çağlar.

[1] **Y.A. Abramovich, C.D. Aliprantis & O. Burkinshaw**, "The invariant subspace problem: some recent advances," in *Workshop on Measure Theory and Real Analysis* (Grado, 1995); *Rend. Inst. Mat. Univ. Trieste* **29** (1998), suppl., 3-79 (1999).