İSTANBUL ANALYSIS SEMINARS

INVARIANT SUBSPACES OF COMPACT-FRIENDLY-LIKE OPERATORS: THE STATE-OF-THE-ART AND SOME OPEN PROBLEMS

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Abstract: Of high relevance to the study of invariant subspaces of positive operators on Banach lattices are the domination properties, through which the order structure provides new features of bringing compactness into the picture. Combined with the celebrated result of Lomonosov on the existence of non-trivial closed hyperinvariant subspaces for compact Banach space operators, the former led Y.A. Abramovich, C.D. Aliprantis and O. Burkinshaw in 1994 to introduce a new notion in terms of the order structure, that of compact-friendliness, which subsumes almost all the properties of positive operators related to compactness. Motivated by a still-unsolved problem of the inventors of the notion of compact-friendliness, a number of results concerning invariant subspaces of compact-friendly or close-to-them operators or operator families have been obtained during the past three years in collaboration with Tunç Mısırlıoğlu of İstanbul Kültür University. The talk will be devoted to the presentation of these results along with some open problems and possible future directions.

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