On the Kernel Dimension of Singular Integral Operators with Weighted Shifts

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Singular integral operators with shifts appear in the modeling of several types of applied problems. In view of this, knowledge about the solvability of equations characterized by such operators is welcome. In this talk, we will concentrate in extracting information about the kernel dimension of certain singular integral operators with weighted shifts. Namely, bounds for the kernel dimension of Fredholm singular integral operators with continuous coefficients and involving a preserving-orientation weighted Carleman shift will be obtained. To attain such a goal, it will be fundamental to construct different types of auxiliary operators (through equivalence operator relations) and to use known Fredholm criteria for these operators.

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