Existence Theory For Some Class Of Nonlocal Integro-Differential Inclusions without Compactness or Norm-Continuity

Semi-Fredholm operators on self-dual Hilbert W*-modules

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We consider semi-C*-Fredholm operators on self-dual Hilbert modules over a W*-algebra. We prove that the index of W*-Fredholm operators is well defined, and we characterize almost invertible C*-operators on self-dual Hilbert W*-modules in terms of C*-Browder decompositions. Moreover, we show that the set of semi-C*-Fredholm and the set of semi-C*-Weyl operators on self-dual Hilbert W*-modules form a semigroup under the multiplication and that the set of proper semi-C*-Weyl operators on self-dual Hilbert W*-modules is open in the norm topology. Finally, we illustrate by examples how the proofs of these results can be used to extend some results from the classical operator theory on Hilbert spaces.