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8. Analysis

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Relations between convolution type operators on intervals and on the half-line

A new method is presented to obtain equivalence after extension relations between convolution type operators on unions of intervals and convolution type operators on the half-line, acting on Bessel potential spaces. The approach is based upon properties of convenient projectors, decompositions and extension operators and the construction of certain homeomorphisms. The advantage of the method is that the relations are stronger than the (algebraic) KuijperSpitkovsky relation with respect to the transfer of properties on the prize that they depend on the orders of the spaces and hold only for non-critical orders, $s - 1/p$ not integer. For instance, generalized inverses are explicitly represented in terms of operator matrix factorization. The results are joint work with L. P. Castro.