Join spaces of integral operators constructed from their group of free–member–combined type

Jan Chvalina
Brno University of Technology, Faculty of Electrical Engineering and Communication, Department of Mathematics
e-mail: chvalina@fce.vutbr.cz

Pavlína Račková
University of Defence, Faculty of Military Technologies, Department of Mathematics and Physics
e-mail: pavlina.rackova@unob.cz

Abstract

This contribution is close to the investigation contained in [7, 8]. Linear integral operators belong to important tools in both classical pure and applied mathematics.

These topics are usually included into mathematical programmes on technical universities for the sake of their applicability in various engineering sciences.

The crucial idea is to investigate groups of linear integral operators on the same set of operators with different binary operations which are endowed with a suitable ordering of operators to obtain ordered groups of integral operators determined by Fredholm integral equations of the first and the second kind.

Using the standard functor of the transfer from the category of ordered groups and their isotone homomorphism into the category of hypergroups and their inclusion homomorphism we construct a hypergroup of integral operators or a hypergroup of classes of equivalence of hypergroups with suitable subhypergroups possessing interesting properties from the view of algebraic theory.

In this contribution we will construct a group of operators which can be also termed as an ordered group of integral operators of free–member–combined type.

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