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Differential operator representations of continuous homomorphisms in mixed cases for entire functions

The problem of continuity theorems and differential operator representations on endomorphisms of some spaces of entire functions arises from a context of superoscillations, and enlarges the applicability of the symbol calculus of operators of infinite order. Such problems for the spaces of entire functions with growth given by an order and by a proximate order are solved in [2] and [3].

In [1], we studied continuous homomorphisms between spaces of entire functions with growth given by proximate orders and gave their differential operator representations both in Roumieu cases and Beurling cases. Today, we report our recent study on such representations for mixed cases. We also introduce the concept of the topological intersection/union theorems, and clarify the merit of studying homomorphisms between spaces given by proximate orders.

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