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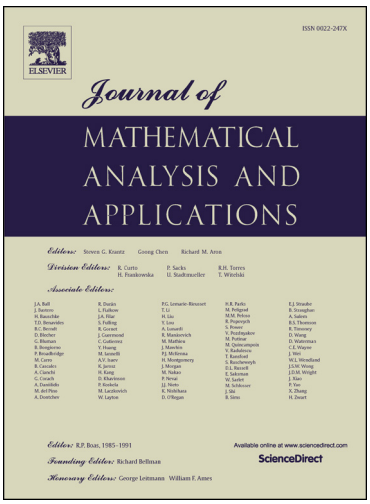

Composition operators on Hilbert spaces of entire functions with analytic symbols

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Composition operators on Hilbert spaces of entire functions with analytic symbols

Jan Stochel and Jerzy Bartłomiej Stochel

Abstract. Composition operators with analytic symbols on some reproducing kernel Hilbert spaces of entire functions on a complex Hilbert space are studied. The questions of their boundedness, seminormality and positivity are investigated. It is proved that if such an operator is bounded, then its symbol is a polynomial of degree at most 1, i.e., it is an affine mapping. Fock's type model for composition operators with linear symbols is established. As a consequence, explicit formulas for their polar decomposition, Aluthge transform and powers with positive real exponents are provided. The theorem of Carswell, MacCluer and Schuster is generalized to the case of Segal-Bargmann spaces of infinite order. Some related questions are also discussed.

2010 *Mathematics Subject Classification.* Primary 47B32, 47B33; Secondary 47B20, 47A80.

Key words and phrases. Reproducing kernel Hilbert space, entire function, Segal-Bargmann space, composition operator, Fock's type model, seminormal operator.

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